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Volume 17 April 1948 Number 4

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The Journal of Industrial Health, Occupational Medicine and Traumatic Surgery

With which are consolidated "The Industrial Doctor" and "International Journal of Medicine and Surgery"

This magazine is published to promote sound thought upon and concerning industrial medicine and traumatic surgery. To that end it will contain articles, news items, reports, digests, and other presentations, together with editors' comments. The editorial policy is to encourage frank discussion. On this basis contributions are invited. The editors will exercise care in checking on the accuracy of data printed but in all other respects articles and opinions of which expression is allowed are the opinions of their authors—the editors reserving in all cases the right to comment on the same in the current or any subsequent issues as they may be inclined.

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NEWS

DR. MARTIN I. HALL, of Bristol, Connecticut, has resigned as medical director for the New Departure Division of General Motors Corporation to take up private practice. His office will be at 19 High Street, Bristol.

DR. CAREY P. MCCORD'S book "A Blind Hog's Acorns" is mentioned in *American Journal of Public Health*, February, 1948, as among the "Best Sellers in the Book Service for January."

DR. HARRY D. NESMITH, of Salem, Illinois, has been appointed surgeon for the surrounding area for the Baltimore & Ohio Railway, succeeding DR. HARRY A. CUNNINGHAM, who resigned after holding the position about 30 years.

DR. HARRY TEBROCK has been appointed Medical Director of Sylvania Electric Products. DR. TEBROCK comes to Sylvania from the Schenley Laboratories. He was a Commander in the U.S. Navy. While on military duty he flew around the world eight times. He was in charge of the first administration in combat of penicillin in the Pacific Area. He took the only official medical history done photographically of medical aspects of the war. He took part in the invasion of Tarawa and the Battle of the Bulge. Although sent as an observer, the casualties at Tarawa were such that he entered the operating room where he worked for 85 straight hours.

DR. ALFRED H. WHITTAKER has been re-elected president of the Detroit Historical Society, his second term. Mystery to *Town Talk* is how the doctor finds the time and the energy to do all the things he does. He has his fingers in many a municipal pie—city planning, housing, in addition to the historical culture. Under the doctor's leadership, the

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—*Detroit News Page Magazine*, January 31, 1948.

DR. S. A. NORRIS has been appointed Chief Surgeon for the Jones & Laughlin Steel Corporation, succeeding DR. H. E. MC GUIRE, retired. DR. B. L. JONES will assist DR. NORRIS with all Jones and Laughlin medical cases that are consigned to the South Side Hospital.

A PROGRAM of unusual interest was presented at the Toronto Academy of Medicine on March 5. It was unusual in the fact that a father and son provided the program. The father, DR. HAROLD HARRISON, Medical Director, George Weston Ltd., Toronto, discussed "Experiences in a Health Program in Industry." His son, MR. GORDON HARRISON, of the Personnel Department of the Canadian General Electric Company, discussed the findings arrived at when his company undertook a survey of the medical services of 16 Canadian industries.

WE NOTE the death of DR. ROBERT ALFRED HEARN, a member of this Association for several years. He died September 1, 1947. He was formerly with U.S. Public Health Service, Director of Industrial Hygiene, State Board of Health of Arkansas. He served as Medical Director of the Indiana Division of the Republic Aviation Corporation in Evansville.

Industrial Medicine Congress In England

TO THE EDITOR: The British Organizing Council of the Commission Internationale Permanente pour la Medecine du Travail is now making arrangements for the Ninth International Congress of Industrial Medicine to be held in London in September of this year. I have been appointed to organize the Industrial Hygiene Section of the Congress, and I am extremely anxious that we should have represented all those who, in all

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parts of the world, have made, and are making, a valuable contribution to the development of this very important branch of medicine.

The United States are recognized as well to the fore in this respect, and I shall, accordingly, be very grateful if you can let me have the names of any who would care to attend the Congress. In particular, I should be glad to know of any who are acknowledged authorities in the field of Industrial Hygiene, and who might be willing to make a contribution to the Congress in the shape of a paper on some related subject.

—M. W. GOLDBLATT, Director
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Georgia Course

GEORGIA School of Technology will again offer in 1948 a summer course in industrial hygiene, similar to the successful one held last summer. The U. S. Public Health Service is again serving as a co-sponsor and providing facilities, equipment and personnel for the field-training part of the course. In order to provide individualized instruction to each student, enrollment will be limited to approximately 20 students. The length of the course will be 12 weeks, June 28 to September 11. Work in course, to be offered on the Georgia Tech campus under the supervision of the Department of Civil Engineering, will consist of five graduate level courses, credit for which may be accepted toward an advanced degree for students with the necessary qualifications. Field training, consisting of participation in actual industrial problems under the supervision of the U.S.P.H.S. Communicable Disease Center, will cover all aspects of industry. Included on the staff are Dr. W. E. Doyle and H. L. Seifert, U.S.P.H.S.; Dr. Trawick Stubbs, Emory University; H. A. Wyckoff, Public Health Department, G. W. Reid, Civil Engineering Department, and J. M. Dalla Valle, Research Division, George School of Technology; and N. V. Hendricks, Standard Oil Development Corporation. Applications for enrollment will be received until May 1 by Dr. R. L. Sweigert, Dean of Graduate Studies, Georgia School of Technology, Atlanta.

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Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154; Laryngoscope, Jan. 1937, Vol. XLVII, No. 1, 58-60; Broc. Soc. Exp. Biol. and Med., 1934, 32-241; N. Y. State Journ. Med., Vol. 35, 6-1-25, No. 11, 590-592.

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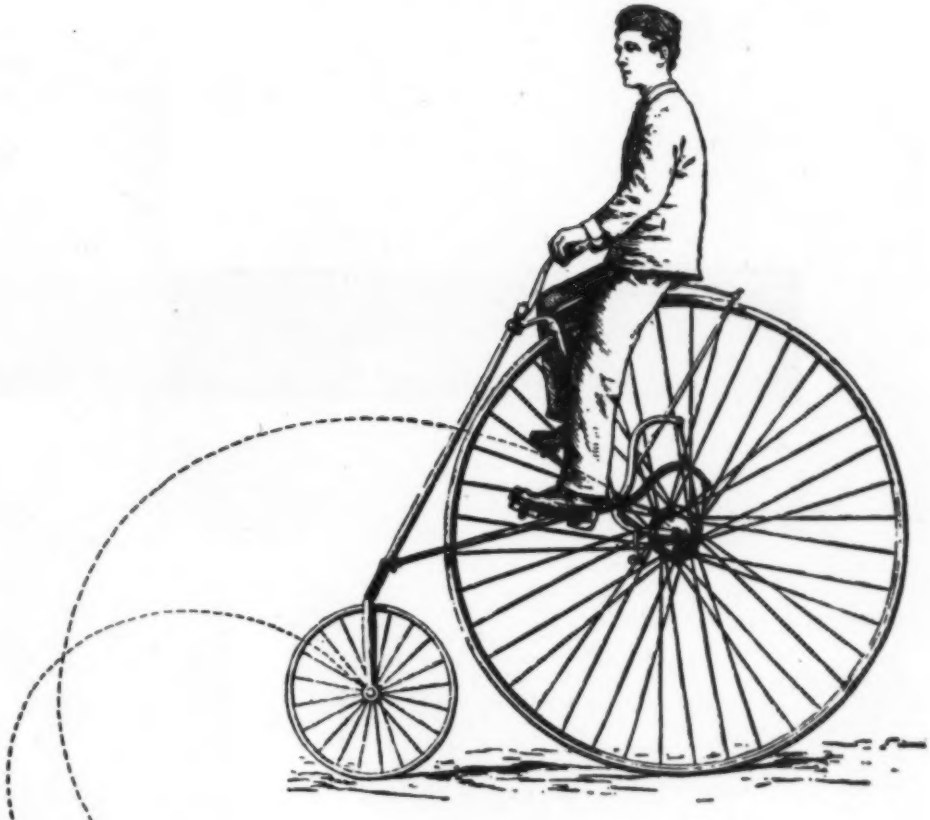

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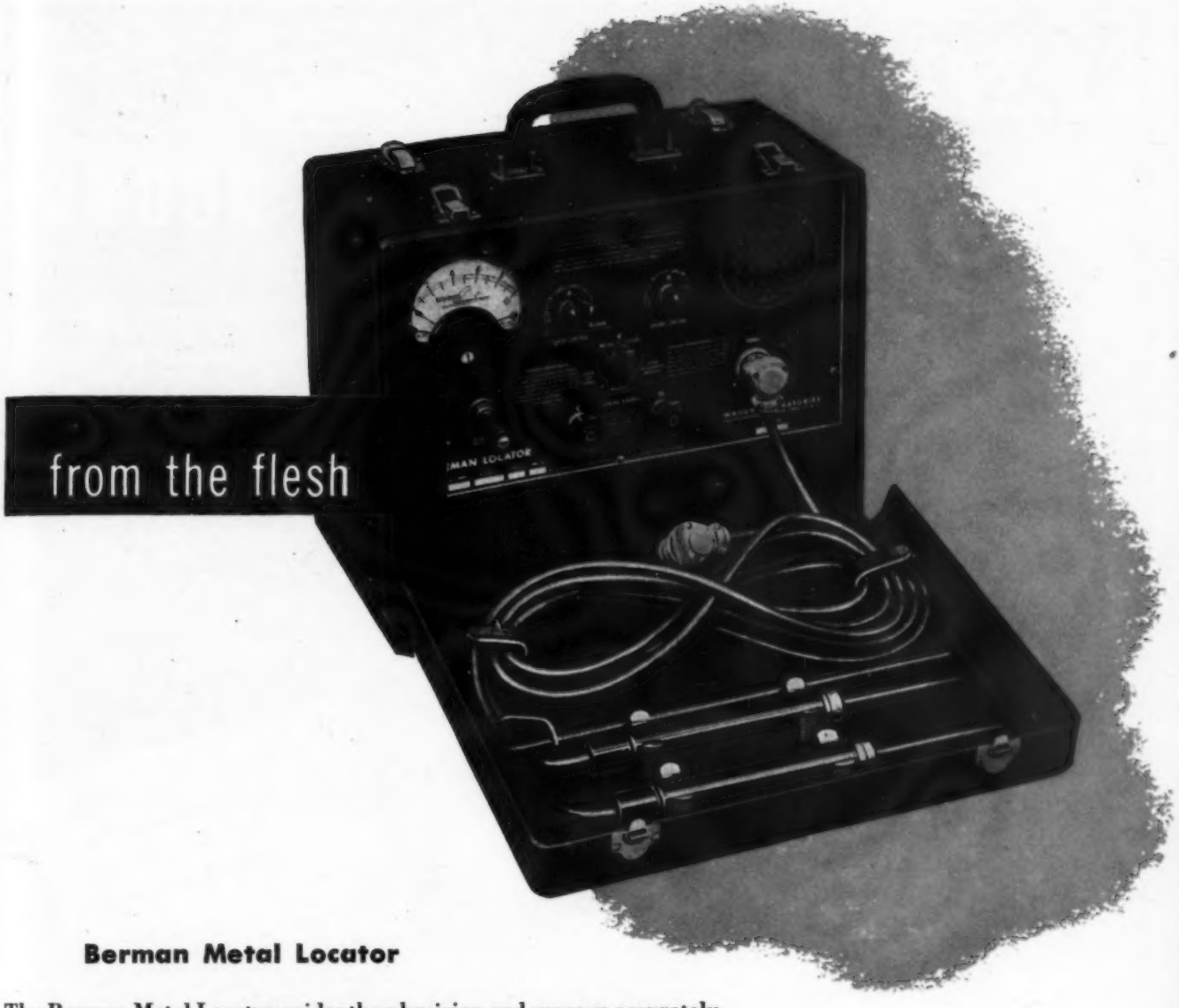

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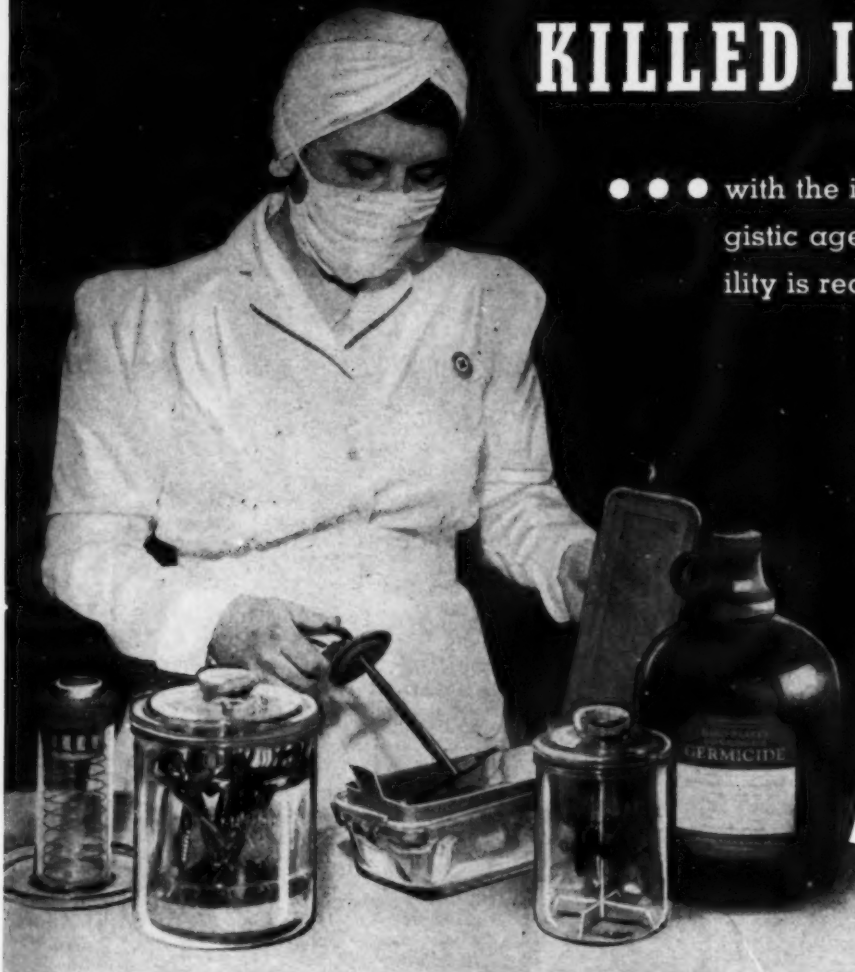

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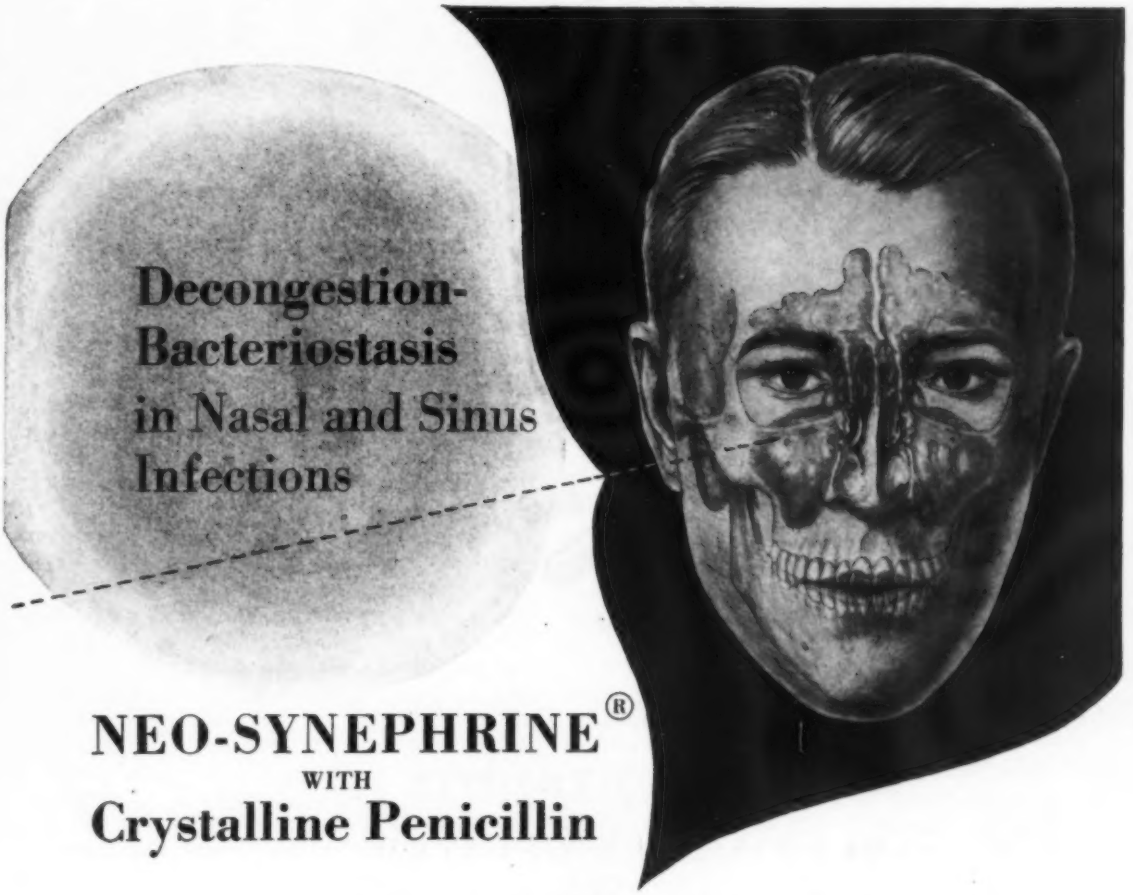

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INDUSTRIAL MEDICINE

Volume 17 APRIL 1948 *Number 4*

Industrial Health and Hygiene — Review 1947

HAROLD H. STEINBERG, M.D.,
Chicago

THE SCOPE of the field of industrial medicine increases as scientific advances continue in all fields pertaining to adult medicine. New observations and experiences in such fields as preventive medicine, traumatic surgery, mental hygiene, otolaryngology, biophysics and chemistry, geriatrics, experimental pathology, and toxicology, must be applied in the job of maintaining the health of the industrial worker. The concept of doing the job well has broadened from the simple expedient of performing physical examinations before placing the individual at work and treating injuries or disease as they occur during the course of employment. It must encompass many of the advances in medicine as they relate to our adult male and female working group in an attempt to keep them employable and productive. Extensive progress has been made in the field of job analysis to prevent excessive physical, environmental and emotional demands upon the industrial worker. Emphasis has shifted from searching for persons with special physical or emotional qualifications to do the very heavy or the very demanding stress jobs in industry to more careful studies of the specific job to eliminate the unusual demands that unfairly take too great a toll from the industrial worker. For these reasons, the field of industrial health remains as a stimulating, interesting and challenging branch of the art and science of medicine.

An attempt will be made to discuss the significant accomplishments and experiments in the field of industrial medicine in the past few years. This, of necessity will be incomplete, but emphasis will be given to those subjects in the field in which new advancements can be applied in a practical way toward improving the health of the industrial worker. Important, too, are considerations to be given to specific problems as they relate to the changing character of our industrial population, brought about by important advances in the field of general medicine. As we attempt to eradicate infectious disease, as we learn to inhibit and to treat degenerative disease, we increase the longevity of our working population. This brings us to our first subject for discussion, the problem of the older worker.

From the medical department of International Harvester Company, Chicago, and Northwestern University Medical School. Presented at the Ninth Annual Meeting of the AMERICAN INDUSTRIAL HYGIENE ASSOCIATION, Boston, Tuesday, March 30, 1948.

Klumpp[1] points out that by 1980 two-fifths of the population in this country, or 60 million people, will be over 45 years of age. One-seventh, or 21 million people, will be over 65 years of age. In this interim period the continuous age shift of the population is taking place. Older people are not happy when idle. The realities of life are more clearly appreciated. Because of physical limitations there is no diversion in sports or exercise. Many are anxious to work to some extent, and their skills can be utilized. Consideration is given to reduction of working hours in an attempt to distribute the productive and recreational time units to the population.

Simonson[2] stresses the deterioration of skeletal muscle strength in the older worker. He observes that muscle strength deteriorates most rapidly in the back muscles, less rapidly in hand grasp. Light muscular effort may depend to a great extent on the maintainance of manual skills.

Kuh[3] suggests that job re-engineering is often effective in helping the older worker remain employable. Experience and skills must be evaluated objectively. In his experience older workers have fewer accidents, turnover is less, and their output is often equal to the younger worker.

A consideration of heart disease and employment is reviewed by Goldwater[4] who considers the risks involved in the employment of cardiacs. These risks are those to the employee, the fellow employees and the employer. In his opinion, and correctly so, the worker with unsuspected and unknown heart disease is a far greater menace to himself and to his fellow employees than the known cardiac. The known cardiac, when placed properly, can be protected against working conditions that would tend to aggravate his existing heart disease.

Some interesting observations have been made in a large industrial plant of the International Harvester Company, manufacturing farm implement machinery.[5] Forty-five workers with significant hypertension have been observed for a period of 10 years, from 1937-47. Of this group, 26, or 57%, have never lost a single day because of their elevated blood pressure for this entire period. Further, 13, or 29%, have not lost a single day from work because of illness of any kind in the 10-year period.

In none of the workers did injury occur to themselves, to their fellow employees or to com-

pany property or equipment which could be directly or indirectly related to an episode of acute cardiovascular dysfunction occurring on the job.

Preventive Medicine

IT HAS long been known that upper respiratory disease accounts for more lost time in industry than any other specific group of diseases. The disabilities, although not serious, may occur frequently and may seriously hamper production schedules. The cost of absenteeism from these diseases accounts for 60 to 80% of the entire cost of non-occupational illness.

Baetjer[6] reviews the methods available at present for the control of upper respiratory infections in industry. Control of exposure must consider not only persons who have active disease, but also those who normally harbor pathogenic organisms in the nose or throat. In the control of droplet infection, such measures as effective spacing of workers, dust suppressive measures, and oil treatment of floors may be of value. The disinfection of air with ultra-violet light and glycols, principally propylene and triethylene glycol, shows real promise.

The personal protective measures include vaccination, principally to known influenza virus strains A and B and their identifiable variants, to streptococcus and pneumococcus. It is emphasized again that cold vaccines are of no value, even though they continue to be used in medical departments and by private physicians.

The influenza vaccines show real promise as determined from Army experience, with a reduction in incidence of 60% in vaccinated individuals as compared to the controls. Immunity titers are built up rapidly in about 10 days and persist to some extent up to one year.

The limitations of such virus immunization is that constantly new variants in even new viruses are being identified which produce epidemics of disease and are not included in the vaccine that the individual received. In the opinion of Baetjer, it would seem more feasible not to vaccinate industrial populations routinely until there is evidence of an impending epidemic. If, ideally, the virus could be identified and included in the vaccine, then the results should show effective reduction in incidence of disease.

The role of virus A variants is clearly shown in the experience of the International Harvester Company, which vaccinated approximately 17,000 employees in the Chicago area in the fall of 1946. About 7,000 employees served as controls. Careful follow-up during the fall, winter and early spring of 1946-47 did not reveal any difference in influenza in the vaccinated and non-vaccinated groups.

A mild epidemic of influenza occurred early in 1947 in the Chicago area. Loosli and his coworkers were able to demonstrate this epidemic to be caused by a virus A variant, an organism not included in the original vaccine. It would seem feasible to include all newly discovered variants as part of the vaccination material to afford as much protection as may be possible.

Dingle[7] reviews the present status of influenza vaccine, and discusses the methods available in the production of mixed virus vaccine. He stresses, too, the considerable variation in the antigenic components of individual strains of A. Diagnostic methods are described in identification of the virus, including nose and throat washings and determination of antibody titer of serum. The use of the agglutination-inhibition testing in diagnosis is evaluated. He stresses the long periods which must elapse before an accurate identification of the virus can be made. He emphasizes the need for the development of a rapid diagnostic test.

Health Service in Small Plants

MILLMAN[8] reports his experience in setting up a health service for seven small plants in New York City. The nurse and physician work as a team, and spend certain specified hours at each plant, the time allotted related to the number of employees and the extent of the medical program. Each employee receives a pre-placement examination which includes an x-ray examination of the chest, blood serology, urinalysis and a hemoglobin determination. The x-ray film and the blood serology are obtained at municipal district health centers. The program includes pre-placement and periodic examinations, and treatment of disability from industrial accident and occupational disease. Plant surveys are conducted to evaluate environmental sanitation, lighting, noise and occupational disease hazards. There is a great deal of time saved in not having to send employees to the doctor's office. The doctor and nurse cooperate in programs of safety and health education which are of real benefit to employee and employer.

Arling[9] presents the experience of a group clinic specifically designed to service industrial plants in an industrial area in St. Paul and Minneapolis. The group consists of surgeons, one industrial hygienist, one administrator, and several general practitioners. Consultation of specialists is utilized frequently. This type of service has proved satisfactory and the demands on the clinic facilities are constantly increasing.

Mental Hygiene

WALTERS[10] discusses the neurotic illness as it occurs in the industrial worker. He points out that we all differ in our reaction to frustration and hostility. In many individuals it is found that work efficiency is impaired. Absenteeism, fatigue, inefficiency, personality clashes, inability to stay on one job may be all manifestations of a psychoneurosis. Accident prone people may present themselves to the safety and medical department. Psychosomatic illness in the forms of "nervous dyspepsia," myalgia, dyspnea, anxiety states can produce symptoms and findings consistent with organic disease. An increase in secretion of adrenalin may mobilize sugar from the liver and into the blood. Air

swallowing may be the basis of eructations or flatulence.

In treatment it is stressed that one recognize the functional components of illness, at the same time physical symptoms, weight loss, anemia, and loss of appetite should be treated. One must lighten stresses, both on and off the job. One should encourage participation in community affairs and in normal recreational pursuits.

The cost that both individuals and industry pay for functional illness is extremely high. It would seem that psychiatric guidance and programs in mental hygiene could serve a useful function in industry.

Weisz[11] considers the criteria for satisfactory adjustment in an industrial group are productivity and satisfactory relationships with fellow employees and management.

Industry should be aware of what factors in the worker make him less efficient and poorly adjusted. He may have personal liabilities, deficient mental capacities, poor physical appearance. In addition, one may be inefficient because of faulty group adjustment. In detecting this type of maladjustment the author feels that placement interviews by a trained individual do help a great deal in satisfactory job selection. Observe the appearance of the person, if he fidgets, if he is nervous or confused, whether he is aggressive or sensitive. Ask the individual what he likes doing, and why he enjoys this type of work. Inquire about his training, and estimate what further instruction he might need. Encourage responsibility in workers, and make them feel that they are important.

Rennie[12] and his group review programs of employee counseling in an attempt to help industrial workers with emotional problems while actively employed. Employee counseling is based on the principle that it is helpful for a person to be able to talk on occasion to an understanding listener who expresses no specific advisory opinions or moral judgments. They point out that industry has falsely assumed that the worker is motivated by material interests only. In reality, social and psychological factors in the work situation are as important to the employee as economic considerations, and good social relationships help good morale and increase production. Psychologists, sociologists and psychiatric consultation are all necessary to develop better avenues for bridging the gap between these problems of the worker and their proper understanding by management.

Noise

IN INDUSTRY men employed as locomotive engineers, in forge work as drop hammer operators, riveters, airplane pilots and boiler makers suffer from impaired hearing.

Grove[13] believes that noise under 100 decibels is not injurious. He lists hammer chipping as producing 110 to 135 decibels and riveting from 115-128 decibels. He suggests that several methods should be tried in reducing industrial noise and ultimately preventing impaired hearing. First, redesign machinery to reduce vibration of unbalanced rotating and reciprocating parts. At present we segregate noisy machinery. He suggests spacing noisy machines in between quieter ones if feasible; and, second, isolation and enclosure of noise source and prevention of spread of noise by absorption treatment of walls and ceiling. He discusses the use of ear defenders or ear plugs. He suggests that they be made so they are easy to insert and retain. They must be light in weight and unbreakable. They must be able to be cleansed simply. They are useful in decreasing noise of high frequency without entirely eliminating hearing.

MacLaren and Chaney[14] conducted a survey in several plants of Lockheed aircraft to determine what type of noise produces hearing loss, and whether noise hastens the progression of other types of partial deafness. Noise levels above 100 decibels are common in metal production, and this is the borderline level between relatively harmless noise and that producing deterioration. They suggest that in departments in plants where the decibels are over 100, preemployment audiograms be taken, and repeated at monthly intervals.

Vision and Illumination

FELTON[15] stresses visual conservation rather than single visual testing. This must be part of an all-over program of adult preventive medicine, and ophthalmologists must be encouraged to participate directly in the program. For the prospective worker, it must include testing for visual acuity for both near and far, stereopsis, color perception and muscle balance, distant and near. The results of these procedures are only important if matched with the visual requirements of the job. Jobs vary greatly in visual demands. A visual job analysis must include a description of the job. It must evaluate working distances from eye to site of operation, both fixed and changing. It must appraise the size of the central working area, and consider depth perception. It must consider the type of visual attention required, fixed or changing, casual or concentrated, detailed or gross. It must consider work motion, slow or rapid, rotating, vertical or horizontal; must consider foot candles of illumination at work area and in surrounding area. It must correct sources of glare. It must consider if color is to be perceived and discriminated. It must take into account glossy surfaces, non-glossy, and uneven. It must recognize and eliminate eye hazards, flying objects, dust particles, fumes, splashing chemicals, molten metals, intense heat and light. It must provide the eye protection that is necessary. In the follow-up program, one must consider the older worker. The problems are those of changing vision with refraction change, aging degenerative processes, cataracts, glaucoma or vascular change in the fundi. He lists some common eye irritants encountered in industry and the structures affected.

Amyl nitrate can produce corneal necrosis, aniline dyes kerato-conjunctivitis, hydrogen sulfide and beryllium conjunctivitis, tars corneal ulcer, acid and alkali corneal ulcer and methyl alcohol, optic neuritis.

Leikke[16] discusses the role of the nurse in any visual industrial program. She suggests that the nurse might do testing technique under the direction of an ophthalmologist. She suggests the use of a keystone telebinocular or the use of an orthorater program or its equivalent.

One of the most comprehensive and informative articles on specification of illumination and color in industry is that of Faber Birren,[17] and I should like to review it in great detail. He points out that authorities with instruments and meters in their hands have attempted to draw conclusions that disregard the physiologic and psychologic facts. The human being sees best and visual fatigue is reduced to a minimum when the entire field of view is of approximately the same luminosity as that to which the fovea is adapted. Most of the discomfort is due to efforts at accommodation and muscular imbalance. The human eye looks alternately at high and low brightness, if the whole visual field is involved. If there is high and low brightness in the same field and if accepted concurrently vision will be affected. He recommends uniformity rather than spotty contrasts.

Indirect and direct lighting may both be adequate under certain conditions. Direct lighting usually provides more foot candles, while indirect lighting is softer and more evenly distributed. Indirect lighting is good in offices. The best type of fixture is a reflector which will transmit intensity of light which approximately matches brightness reflected by the ceiling. However, if the floors and desks are dark, the ceiling may become a source of glare. He suggests using light-colored desks and furnishings. It might be commented that, although reflector fixtures are now commonly seen in offices, desks and furnishings are probably uniformly dark rather than light.

The spectral quality in light, a yellowish tint, is excellent. Daylight illumination is only good in extremely accurate color discrimination. The bluish quality, for example, of fluorescent fixtures blurs. It is cold and has an unflattering effect on human complexions. It may even, on occasion, precipitate psychoneurotic tendencies.

Visual planning is inseparable from the environment. Proper control of illumination must be supplemented by careful regard for the proper color in painting ceilings, walls, equipment, and machines. Uniform lighting is said to be tolerable when brightness ratios do not exceed 1-to-10. In the average industrial situation a machinist works on dark materials, such as metals, with machines dark, and the floors dark and oily. If the plant is old, perhaps 10 foot candles are supplied, and if a newer structure probably 20-25 foot candles. But if only the walls are painted bright, the brightness ratios will be increased to 1:100 and the illumination will actually be less efficient than before. To meet this situation, lift brightness from the bottom up. The concrete floors might be bleached and the machinery and equipment should be painted with lighter colors. Ceilings should be painted white.

Color for industrial purposes should be soft and delicate. The grey hues are best, because they are lacking in aggression and less distracting. Where men work in high temperatures, cool colors should be used, such as green or blue. If men work in cool or cold surroundings, warm colors should be used, as peach or red-orange.

In planning color, illumination and brightness should be supplemented by an intelligent consideration of color. Beauty can be functional when it improves mental attitudes and contributes to emotional and psychic gratification. One must never overlook the psychologic factors in color planning. The job of color is not so much to pep up the task; it must become integral to the task, not foreign to it.

A practical color for all-around use is a soft tint of blue-green. Blue-green is cool and not monotonous. It has a bluish cast under daylight and yellowish under artificial light. It is the direct visual complement to the human complexion.

In casual places, cafeterias and work rooms, light and clean colors should be used. For women, rose is a good choice; for men, the lighter softer shades of blue. In stairways and corridors deprived of natural light, bright tones of yellow serve well. Storage rooms should be painted white. On jobs where critical seeing tasks are performed, use soft variations of green-grey or blue. Grey machinery highlighted with buff on important parts is effective.

Color serves a useful and functional purpose as a means of identification in safety practice. Yellow or yellow and black becomes standard for strike-against, stumbling or falling hazards. It should be painted on obstructions, low beams, or dead ends. It is the color of highest visibility in the spectrum and is conspicuous under all lighting conditions. Orange should be used for potential acute hazards likely to cut, crush, shock or burn the worker. It should be used inside of machine guards and electric switch boxes. Green should be used on first-aid equipment, cabinets for stretchers, and more commonly in medical dispensaries. Blue is standard as a caution signal. It can be used on equipment, elevators and machines down for repair. White and grey are good for traffic control. They can be used as aisle marks and painted on waste receptacles. These colors encourage good housekeeping. Red should be used for fire protection only.

Occupational Cancer

HUEPER[18] considers occupational cancer from the standpoint of its relation to the problem of cancer research, pointing out that industrial exposures to carcinogenic agents represent in a way controlled experiments on human subjects. He likens industrial cancer to a "biological time bomb with a delayed time fuse which may dis-

play its deadly effect years later." He stresses prevention by all groups.

Henry[19] reviews 3,753 cases of cutaneous cancer and reports them. Pitch, tar or tar products were held responsible for 2,229 of the 3,753 cases. Shale oil, mineral oil or bitumen were responsible for 1,515 cases.

Salter[20] reviews the biochemistry in occupational cancer. There are many carcinogens, but they occur only in impurities in small concentration of polycyclic hydrocarbons. This structure of carcinogen is limited to flat molecules. The chemical structure is 3, 4-benzopyrine and produces cutaneous cancer.

In the field of systemic cancer the amino and azo compounds, the crude coal tars and intermediates and anilines may produce tumors. These structures are those related to the napthamines. These act by paralyzing the enzyme systems of cell oxidation. Either the cell dies or abnormal growth results—a cancerous cell.

Aviation Medicine

TILLISCH,[21] of the Mayo Clinic, reviews the ever-expanding field of aviation medicine. He points out that the field has grown from concern only in selection of pilots to consideration of the public who have become "flying-minded." He suggests, too, that in industry this type of transportation is being more frequently used than ever before. He discusses the physiologic principles involved in both the healthy and the sick individual. He attempts to answer the question as to who may or who may not fly. He divides the atmosphere into the trophosphere up to 33,000 feet and the stratosphere above this elevation. The physiologic principles involved are those relating to decreased partial pressure of oxygen, turbulence and weather change. He points out that with a decrease in oxygen pressure, there is expansion of gases in the body cavities and the evolution of gases in body fluids. The temperature drop corresponds to approximately 1° to 2° C per 1000 feet. From sea level to 10,000 feet, the individual is able to fly without any evidence of compensatory phenomenon. From 10,000 to 14,000 feet there are definite compensatory processes brought into play. The respirations are deeper and more rapid. There is an increase in pulse rate and blood pressure. From 14,000 to 20,000 feet, the compensatory mechanisms are not adequate and obvious signs of anoxia appear. This is known as the disturbance stage with mental and memory changes; personality differences and incoordination appear. Cyanosis is marked. Vision and other special senses are grossly disturbed. Generally, these effects of anoxia are temporary, and when oxygen is supplied the individual usually responds adequately.

He recommends that generally individuals with far-advanced heart disease, especially those types interfering with pulmonary aeration, should not fly. Another group in which flying is contra-indicated are individuals with tuberculosis who are receiving pneumothorax therapy.

Speert[22] reports on the role of noxious vapors in causing aircraft accidents. Exposures are more serious at higher altitudes because the anoxia increases the toxic effects of the vapors, and the concentration of material being volatized increases as the barometric pressure is decreased. The vapors are principally gasoline fumes, exhaust gases, principally carbon monoxide, hydraulic brake fluids, coolant fluid vapors such as ethylene glycol, and oil fumes. The effects of these noxious gases can be minimized by the use of masks with pure oxygen supply. If high concentrations of gasoline fumes exist, there is an additional explosive hazard.

Atomic Medicine

WARREN[23] and his co-workers, in an excellent article, reviewed the problems which confront the physician in the use of atomic energy. The results of exposure to atomic energy are blast effects, thermal effects, effects of radiation, and psychological effects. Blast and thermal effects are due largely to infra-red and ultra-violet radiation. More important are exposure to shorter wave radiations, gamma rays, beta and alpha rays, neutrons and possibly mesotrons. X-rays, gamma rays and neutrons have high penetrating power. Alpha and beta rays are generally only harmful when the source is in the body.

Gross and LeBland[24] review the work that has been done with radioactive lead, radium, thorium, phosphorous, calcium, strontium, zinc and iodine. Details of tissue localization and also of cellular localization within particular tissues are given for each element. These so-called tracer or tagged elements may play a fundamental role in biologic and industrial toxicologic research.

Alt and Cooper[25] discuss the use of radioactive isotopes in medicine. The cyclotron and uranium pile have made possible radioactive isotopes of almost all the metals. The radioactive isotope differs from the stable isotope only in the number of neutrons in the nucleus. The clinical use of radioactive isotopes is largely for selective radiation of different tissues of the body. The authors discuss the use of radioactive phosphorus in the treatment of blood diseases and diseases of the bone marrow. Radioactive iodine has been used in the study of thyroid physiology, in diagnostic studies of thyroid disease and for the treatment of hyperthyroidism. The treatment of cancer of the thyroid with radioactive iodine is limited since malignant lesions of the thyroid gland do not store iodine. This may be useful in differentiating malignant from non-malignant involvement of the thyroid gland. Other investigators have used radioactive sodium in the form of sodium chloride to evaluate circulation in the extremities in peripheral voscular disease.

LeRoy[26] reviews the medical sequelae of the atomic bomb explosions at Hiroshima and Nagasaki. There were about 120,000 persons killed and an unknown number injured. The injuries resulted from concussion, heat, light and ionizing

radiations. Radiant heat produced flash burns with clothing giving fairly effective protection. Some burns occurred in individuals who were 2½ miles from the area of explosion. Intense light increases the amount of heat causing burns. The ultra-violet light produced conjunctivitis. The ionizing radiations, mostly gamma rays, produced three degrees of injury. In those most heavily exposed, fever and diarrhea appeared in from four to seven days, they usually failed rapidly and died in about 10 days. In about one month, the intermediate group lost their hair. They experienced gastro-intestinal disturbances characterized by frequent diarrhea. They presented fever, anemia, leucopenia, and purpura. The principal causes of death in this group were pneumonia and septicemia. In the lesser exposed groups, aplastic anemia was the chief cause of death. He lists four objectives in the treatment of patients exposed to large amounts of gamma radiation. First, maintain fluid and acid base balance, control infection, combat hemorrhagic tendency, and correct anemia.

The industrial hygiene approach to the control of atomic radiation must include careful planning in the handling of these materials. The use of effective shields, with sufficient distance and magnetic reflection may all be effective in some degree. The health physicist is an important member of this group since, by means of the electroscope and certain other portable instruments, he can measure the extent of radioactive materials as they exist in the workroom atmosphere. The individuals exposed should have careful periodic physical examinations with adequate indicated laboratory procedures.

One must stress that medical examination of workers exposed to radium is not enough of an informative procedure in itself effectively to evaluate the absorption of these materials. Only regular examination of breath samples for breath radon levels can give some evaluation of the amount of radioactive material being absorbed. The control of the workroom environment must include, first and foremost, the education of the worker in the proper and safe handling of these materials. Instruction as to safe working habits and personal hygiene is important, as are adequate ventilation of the workroom and good housekeeping.

Occupational Skin Disease

DOWNING[27] reviews the major problems which are encountered in industrial establishments in which skin disease results from occupational exposure. It is his contention that the majority of true occupational skin diseases are due to primary skin irritants. These are mechanical, chemical and physical agents. The chemical substances are acids, alkalis, metallic salts, and solvents. Patch tests are of no value in this group, since a majority react to these substances.

If the lesion heals, and the job is changed to minimize exposure, or the worker provided with effective protection to the exposed skin surface, the worker may then return to the same job.

The sensitizers are a different group and include essential oils, certain soaps, cement, certain acids, chromates, sulfates, arsenates and nitrates. Patch testing may be of value in this group. The characteristis lesion is an allergic dermatitis or eczema. When the lesion heals, it is best that the worker not return to his previous occupation, unless one is certain that the job exposure has been completely controlled.

The treatment is always elimination of the causative factor. He stresses active, but gentle treatment of the skin.

Watrous,[28] in his review of health hazards in the pharmaceutical industry, lists aminothiazole as producing an urticarial-like lesion of the skin. In his experience, powdered penicillin acts as a potent sensitizer and skin irritant. Crude drugs may act as primary skin irritants.

McGill and Ray[29] report the appearance of dermatitis from the use of the "newer" cold-type permanent waving process by primary irritation or through development of a contact-type dermatitis. Cotter identifies the active skin sensitizer as thioglycolic acid, which may occur in concentrations up to 5% in cold wave solutions.

The use of fatty acids, undecylinic and propionic acids, in the treatment of fungus infection of the skin has been demonstrated to be effective by the work of Peck and several others.

Dust Exposures

IN THE field of industrial dust, a significant toxic exposure has been reported by Shaver and Riddell,[30] who describe lung changes associated with the manufacture of alumina abrasives. The toxic ingredient is bauxite and, in the processing, there is considerable evolution of white fumes into the workroom, containing considerable quantities of aluminum and silica. The abrasive manufactured is corundum, aluminum oxide of great hardness widely used as an abrasive. The symptoms are those of dyspnea, and sudden attacks of coughing and expectoration. Three hundred forty-four individuals were exposed, 35 with definite x-ray findings, and 13 with doubtful changes. Seven of these cases have terminated fatally with progressive symptoms of increasing severe shortness of breath. The x-ray findings are those of bilateral lace-like granular shadowing. Pneumothorax is a frequent finding, but it is rarely accompanied by fluid. Pathologically, the lungs are normal in size and weight. In general, emphysematous blebs and bullae were found somewhere on the pleural surface. The lungs cut with considerable resistance, with the parenchyma involved by dense fibrous tissue. There was no evidence of caseation, or other evidence of active tuberculous disease. It is speculated that the blebs and bullae on the surface rupture spontaneously and give rise to pneumothorax.

The subject of exposure to beryllium and its compounds was discussed at a symposium conducted at Saranac Lake,[31] by physicians, engin-

eers, industrial hygienists, and experimental pathologists interested in this specific problem. It is not known whether beryllium and its compounds are alone responsible for the clinical manifestations described. The effects vary from irritation of the upper respiratory tract, the production of a typical dermatitis to those of significant involvement of the lungs. The effects on the lungs are principally of two types. First, an acute pulmonary reaction, a pneumonitis, which usually clears up in a matter of two days to one to two weeks. This illness only occasionally terminates fatally. The second type of pulmonary lesion is best described as a chronic pulmonary granulomatosis. It may be delayed in onset from one month to five years after exposure. There is no apparent relation to severity of exposure and development of the disease. The symptoms are those of progressive shortness of breath, cough and loss of weight. The mortality rate in the cases observed thus far has been high. The causative factor at present is believed to be beryllium and some unknown factor.

Exposure to extensive concentrations of cadmium fumes have been reported by Paterson[32] to produce rather severe pulmonary edema. The great majority of cases recover, but it is believed that some permanent residual fibrosis remains as part of the healing process. A safe working limit is believed to be about 0.1 mgm. per cubic meter.

Hamlin[33] questions seriously the silicotic origin of nodular shadows in chest x-ray films of grinders and burners in the foundry industry. Some of these workers developed lesions consistent with tuberculosis infection, which remained static over a period of 10 years. This is contrary to the widespread progression of tuberculosis in silicotic lungs. The industrial hygiene survey in these plants does not appear to be adequate to explain the nodulation on the basis of exposure to significant amounts of free silica. He believes that the x-ray findings are the result of deposition of iron pigment.

Davies[34] reports the occurrence of manganese pneumonitis in workers engaged in the manufacture of potassium permanganate. The pneumonia occurred rather frequently, with 26 cases per 1,000 workers. There were no fatalities.

Collen[35] reports on the incidence of pneumonia in shipyard workers, with specific reference to welders. He concludes there is no difference in incidence and mortality rate of pneumonia in welders as compared to other shipyard workers.

The subject of silicosis, as always, merits the attention of several investigations. King[36] analyzes critically the solubility theory of the causation of silicosis. He presents the modern chemical theory which postulates that the dust particle which gets into the lung produces damage because of a toxic material dissolved from its surface. This is thought to be silicic acid. Silicic acid is a known protoplasmic poison. However, it is known to be absorbed from the intestine and excreted by the kidney without harmful effect. This form of silicic acid is different from that released from a quartz particle in a phagocytic cell. The author draws no definite conclusions and suggests further investigation.

Hatch and Kindsvatter[37] in a significant article studied the retention of quartz particles less than 0.5 microns. They found that particles of this size were retained in the respiratory system in sufficient amounts to damage the lungs. They were well distributed in the parenchyma, with considerable alveolar retention.

One might review the present status of aluminum therapy in the treatment of silicosis. First, there is no proof as yet, that the methods evolved in administering aluminum powder by inhalation in human subjects will afford the protection which has been observed in laboratory animals. In the patient with fully developed and established silicosis, there is no proof as yet that treatment with aluminum in any way modifies the progress of the disease. In the presence of a tuberculous infection, the treatment of silicosis with aluminum powder is contra-indicated.

The evidence for or against continued use of this treatment can only be evaluated in studies where careful clinical observations are recorded, including serial periodic x-ray films. Controls are essential for effective comparison.

Metals and Metallic Compounds: Lead

TELFER[38] reports on the use of BAL in the treatment of lead poisoning. The patient, a 40 year old maintenance worker on ocean-going ships, worked a great deal with paint. He, personally, mixed the paint and was a firm believer in a good "lead paint." At the time he developed his lead poisoning, he worked in a poorly ventilated room. His symptoms were cramp-like pain in the abdomen, weakness and nausea. The episode receded only to return with typical cramp-like pain in the abdomen and diarrhea. In between these episodes, he was constipated. The findings were those of a pasty complexion, lead line on the gum margins and tenderness of the abdomen. Examination of the blood revealed an anemia and a 2% incidence of stippling of the red cells. The urinary lead estimated by the dithiozine method ranged from 0.10 to 0.04 mgms. Pb per liter of urine. On the eleventh to fourteenth day of illness, the patient was given BAL with some increase in urinary lead excretion. There was no exacerbation of symptoms. It seems that there is questionable proof of the efficacy of this treatment.

Brown[39] evaluates the lead content of the blood in its relation to rarefying processes in bone. In mobilization of bone tissues by osteolytic processes, there may be mobilization of lead at the same time. In individuals with chronic exposure to lead, the occurrence of osteolytic process in bone may precipitate lead poisoning.

Wormser[40] informs us that only 30% of paint manufactured is lead-containing paint. However, 1,000,000 tons of lead are used in this country annually. The largest single user of lead is

the storage battery industry. In my experience this industry presents the greatest potential and active industrial exposure to lead and lead compounds. Other industries with significant exposure to lead are the smelting of lead and lead alloys, and the manufacture of white lead paint.

Drinker,[41] reviewing public exposure to lead from house painting, leaded gasoline, and plumbing, concludes, and correctly so, that the exposure is not usually significant. Food and drink are not a significant source of lead absorption.

Machle[42] discusses the basic hematologic disturbance in Pb poisoning. He feels it may be principally an interference in the utilization of protoporphyrin. He believes, too, that there is disturbed synthesis of hemoglobin with the production of hypochromic anemia. He emphasizes again that stippling is not a specific charge in lead poisoning. The greatest value of stippled cell counts is derived from recurring periodic observations on a group of exposed workmen, and comparison of these results with previous values and unexposed controls. Belknap, who has had extensive experience with workers exposed to lead, adheres to this view.

Kehoe,[43] on careful observation, concludes that the values of blood and urinary lead are consistent with occupational exposure, and with relatively good correlation in varying degrees of occupational exposure going from relatively mild to hazardous. In urines with mean concentration up to 0.11 to 0.12 mgm., there is generally little evidence of lead intoxication. Above this, evidence of lead poisoning can be found.

Paterson[44] reviews the pathologic changes occurring after extensive exposure to cadmium fumes, and describes three stages of the disease. First, an acute pulmonary edema which appears a few hours after exposure and lasts about three days. Second, some fibroblastic proliferation which progresses up to 10 days. He suspects the existence of a third stage of pulmonary fibrosis, the residue of the acute process. He bases his findings on autopsy studies on two fatal cases of cadmium poisoning.

Princi[45] reports a study on 20 workers employed in a cadmium smelter. The process was that of solution and electrolytic extraction of cadmium from different types of ore. The average concentration of cadmium in the workroom atmosphere was up to 31.3 mgms. of cadmium per cubic meter of air. The exposures, however, were brief and intermittent in character. There were no definite clinical abnormalities observed.

Hick[46] describes a case of industrial cadmium poisoning in an arc welder. He worked at torch-cutting of torpedo heads coated with cadmium. He describes the liberation of thick, yellow fumes in the process. The patient describes the appearance of pain and irritation of the throat, chills, nausea and vomiting occurring the evening of the day of exposure. He returned to work the next day, but experienced chills, cough and weakness. He was seen by his physician, after an interval of 48 hours, with findings consistent with some pulmonary edema. He was hospitalized for about 10 days with no apparent progression of his disease. He was discharged as completely recovered without sequelae.

Buekell, Hunger, Milton and Perry[47] review the subject of chronic mercury poisoning. They list the most prominent symptoms as erethism, tremor, and stomatitis. The psychic symptom known as erethism is a most peculiar form of timidity, most evident in the presence of strangers. The name is derived from the Greek word "red" and is attributed to the blushing embarrassment of the worker affected. The most characteristic symptom is tremor. It is neither as fine nor as regular as that of hyperthyroidism. It usually begins in the hands; then the eyelids, tongue, and lips are affected. The arms and legs may be so affected that it may be difficult for the individual to walk around the workroom. Stomatitis manifests itself by salivation and tenderness of the gums. The gums are swollen and bleed readily, and only rarely is a mercurial line seen on them. The authors stress the differentiation of these symptoms as they occur in industrial intoxication from those that occur from acute mercury poisoning, which usually results from the intake of mercury bichloride by accident, as an overdose of drug or with suicidal intent. In acute mercurial poisoning, diarrhea and renal symptoms are common. There is marked reduction in the output of urine. These individuals usually die in uremia. The occupations in which there are significant mercury exposures are listed as the felting of fur and the manufacture of hard felt hats, the manufacture of tungsten-molybdenum rod and wire, and the manufacture of barometers and thermometers, and the chemical industry, particularly in the making of pharmaceutical compounds of mercury.

Fairhall[51] reviews the toxicology of the newer metals. Among these we briefly describe his comments on cobalt, indium, platinum, tantalum, uranium and vanadium.

The use of cobalt has increased industrially with a reported usage of 6,000,000 pounds in 1944. It is used in carbide-type alloys, but principally of "Alnico" magnets, an alloy of cobalt nickel and aluminum, and in the manufacture of tungsten carbide and other metal carbide tool tips and dyes. In animal experiments, the administration of cobalt salts produces polycythemia. In an investigation in the tungsten carbide industry, Schwartz and his associates have shown that powdered cobalt produces dermatitis.

Indium is being used industrially for plating aircraft engine bearings. Toxicity studies are incomplete, but McCord did not report any injury following the application of indium or its salts to the skin. Investigation experiments in large doses in animals, conducted by Van Oettingen, did not reveal any toxic effect.

Hunter and his associates have investigated four platinum refineries. About one-half of 91 workers exposed to the dust or spray of complex salts of platinum were subject to irritation

of the nose and throat, tightness of the chest, shortness of breath, cyanosis, wheezing and cough. Thirteen of the workers complained of dermatitis. They conclude that platinum salts, carried as dust or mist, present a hazard, and that such materials should be prevented from contaminating workroom atmosphere.

Tantalum has been used in surgery, both for sutures and for skull plates. The greatest use of tantalum is in the cemented carbide industry. There have been no reported studies or occurrences of toxicity.

Uranium is an extremely poisonous element. In animals, evidence of kidney and liver injury have been reported. Recent studies by Holman have shown that uranium produces acute necrotizing arterial lesions affecting principally the large elastic arteries.

Vanadium is used for making special alloy steels, and is an ingredient of the best high speed steels. Vanadium sulphide dust has produced severe pulmonary edema in animals.

Williams[48] and his co-workers report on exposure to mercury compounds in the manufacture of the Ruben cell, an alkaline dry battery. The battery derives its EMF from a reaction, in the course of which mercuric oxide is reduced to metallic mercury. Several actual cases of mercurial intoxication have been reported by Belknap in a similar type of industrial exposure, but were accidental. Significant exposures occurred as a result of breakdown in production with liberation of extensive concentrations of mercury into the workroom atmosphere.

Clinton[49] reports an industrial case of selenium intoxication. This was an acute exposure in a plant engaged in smelting scrap aluminum and other non-ferrous metals. The aluminum scrap consisted of rectifier plates coated on one side with metallic selenium. The worker describes the evolution of a dense cloud of reddish fume into the workroom atmosphere. The symptoms were those of irritation of the mucous membrane of the respiratory tract with coughing and sneezing. Physical examination revealed conjunctivities, inflammation of the mucous membrane of the nose and throat. There was no elevation of temperature and the blood count was normal. There was selenium in the urine and no garlic odor to the breath. Apparently the exposure was too irritating, and the worker apparently removed himself from exposure before excessive absorption could take place.

De Meio[50] reports on the effectiveness of the use of ascorbic acid in reducing or eliminating the garlic odor of the breath in workers exposed to tellurium fumes. It was believed that by reducing telluride to elementary tellurium, the garlic odor of the breath could be eliminated. Ascorbic acid was used on four workers in doses of 750 mgms., three times daily, at three-hour intervals. The garlic odor of the breath was considerably reduced in strength or completely disappeared, but returned after discontinuing the ascorbic acid treatment. One should caution that this only alleviates one symptom indicative of exposure. I am certain that the author agrees that every attempt should be made to reduce absorption of tellurium and its compounds by providing control measures in the workroom.

Industrial Toxicology: Gases

SCHWERMA and Ivy[52] review critically resuscitation from carbon monoxide asphyxia. Their results in experiments with dogs acutely asphyxiated with carbon monoxide, show that positive pressure mechanical resuscitation with 100% oxygen or 7% carbogen is more effective than manual respiration. Resuscitation depends on the resumption or maintenance of adequate circulation. Positive pressure mechanical resuscitation with 100% oxygen, administered after all respiratory movements have ceased, is effective in some cases if it is accompanied by intracardial injection of adrenalin and atropine. The chances of post resuscitation neurological sequelae increase with the length of pre-resuscitation anoxia. Successful resuscitation, using any method, depends on the following primary conditions: an unobstructed airway, functioning alveoli absorbing oxygen and eliminating carbon dioxide, and an adequate circulation of oxygenated blood to the heart and central nervous system. The authors suggest that artificial respiration should be begun at once, preferably the Schafer method, until a resuscitation arrives. They point out it is far better to start at once with a less efficient method than wait for a more efficient one.

Moeschlin tells of the increasing CO content of illuminating gas in Switzerland during the war years. In 1939, this gas contained 8% CO, in 1944 it was up to 25%. In 1939, there were 101 fatal cases of CO poisoning; in 1944, the number rose to 291. Most of these were suicides and were not due to industrial exposure. Approximately 82 were accidental deaths, which included industrial and non-industrial cases.

Donald[54] reviews the effects of increased tensions of oxygen on men as reported by several investigators. The author stresses the real probability of pulmonary damage by increased tensions of oxygen.

Frevrich[55] reports hydrogen sulphide poisoning in two men attempting to clean a septic tank containing concentrated sulphuric acid. They developed conjunctivitis, respiratory embarrassment, and unconsciousness. One died of severe pulmonary edema. The author stresses the fact that hydrogen sulphide in high concentrations paralyzes the olfactory endings, and the individuals may not be aware of the usual, unpleasant odor associated with it. As a medico-legal test, he suggests the discoloration of lead acetate paper applied to the cut surfaces of the muscles and lungs. There is no satisfactory blood test, since decomposition occurs too rapidly. The gas is oxidized at once to oxyhemoglobin and little or no sulphhemoglobin is formed.

Watrous[56] reports the use of phosphorous oxychloride and phosgene as chlorinating agents in

the organic synthesis of certain pharmaceuticals. These are all lung irritants and may produce pulmonary edema.

Aldridge and Evans[57] review the effects of inhalation of cyanogen chloride in concentrations of 100 mgm. per cubic meter. It produces severe upper respiratory irritation, with conjunctivitis and lachrymation. Vomiting and convulsions occur frequently. At autopsy there is marked generalized inflammation of the upper respiratory tract, pulmonary edema and right heart enlargement. Cyanogen chloride is rapidly converted in the blood to hydrogen cyanide. The oxygen usage of the anemias was greatly reduced.

Kensler[58] and his co-workers tested 150 compounds for protection against the lysis of erythrocytes by arsine. Fat soluble monothiols and dithiols, such as 2,3-dimercaptopropyl ether and 1,2-dimercapto propane were the most effective. Ascorbic acid in high concentrations was effective.

Industrial Toxicology: Solvents

CLINTON[59] points out that accidental poisoning as a result of the inhalation of toxic gases and vapors is being encountered more frequently. In a series of interesting experiments on human subjects, this investigator demonstrates that only substances irritating the upper respiratory tract, for example, ammonia, interfere with the normal breathing pattern. Experimentally, even after short exposures, the subjects were not willing to inhale additional irritant. With trichloethylene, however, even after exposure to 10,000 per million, perhaps 50 times the permissible safe allowable concentration, the respiratory pattern was unaltered. These individuals did not cough or sneeze; there was no inflammation of the nose and throat. These individuals were not reluctant to continue with further exposure. Since this concentration of trichlorethylene approached the anesthetic level, it is highly significant, in that much lower concentrations are capable of producing severe organic disease after prolonged or repeated exposure. The author stresses that such exposures will only be avoided if the employee is made aware of their possible consequences, and if the employer is aware of the use of a toxic solvent and will make every effort to control the exposure effectively.

The author points out to physicians that they are aware of the possibility of solvent exposure only in cases of liver diseases or impairment of blood cell formation. The possibility of a toxic exposure is, therefore, usually thought of in unexplained jaundice, and anemia and leucopenia. He stresses that many toxic exposures may result in a nephritis that clinically may be mistaken for ordinary glomerulo nephritis. He cites several reports of acute toxic nephritis following carbon tetrachloride intoxication. We have recently seen two acute carbon tetrachloride exposures and in both of these the clinical picture has been that of a toxic nephritis with acute renal insufficiency.

Bowers[60] presents an interesting case of benzol poisoning in which the individual was constantly exposed to benzol from 1937 to 1942 and intermittently until the onset of his illness in December, 1944. The symptoms were those of loss of appetite, fatigue, pallor, palpitation and muscular aching. Clinically and pathologically, the pattern was that of a progressive intractable anemia, leucopenia and thrombocytopenia. The patient died and at autopsy the bone marrow was found to be grossly hyperplastic, with extensive areas of extramedullary hemopoesis.

Watrous[61] discusses the use of volatile solvents in the pharmaceutical industry. He states that benzol constitutes a major problem since it is an excellent solvent for many active principles of drugs.

Vigliani[62] reports on 100 cases of carbon bisulphide poisoning in Italy. These cases were principally in the rayon industry. The author describes polyneuritis usually of the lower limbs, bilaterally, associated with paresthesia and hyperesthesia. There was less of motor power and the reflexes were diminished. Gastric disturbances, headache, vertigo, tremor and sexual weakness were encountered. It is interesting that psychic disturbances were not too frequent, which differs greatly from an exposure to carbon disulphide in the rayon industry reported several years ago in the United States.

Goldwater[63] discusses the changes in the bone marrow in cases of solvent poisoning. He states that in benzol poisoning, although the blood peripherally is aplastic, the marrow may be hypoplastic or hyperplastic. In ethylene glycol-monomethyl ether, the anemia is aplastic in type. In less severe cases, there may be a shift to the left in leucocytes.

Flinn[64] reviews the toxic effects of the chlorinated hydrocarbons. He lists carbon tetrachloride, trichlorethylene, chloroprene and vinyl chlorides. He states that they are absorbed through the skin and lungs, causing dermatitis, liver and kidney damage, neuritis and central nervous system depression. The symptoms are diverse and may include nausea, anorexia, vomiting, abdominal pain, edema, lumbar pain and anuria. Headache, fatigue and drowsiness may be important presenting complaints. He suggests that alcoholics, obese individuals, or persons with known pre-existing liver or kidney disease not work at jobs with potential exposure to these solvents.

Gyorgy[65] and his co-workers exposed rats to extensive concentrations of carbon tetrachloride for 150 days. Animals on a low-protein diet showed greater susceptibility than those on a high-protein diet. Methionine was a good protein substitute in the diet. Increase in fat intake with correspondingly lower carbohydrate intake, especially in combination with a low-protein diet, was harmful. The main findings of intoxication were necrotising nephrosis, and hydropic degeneration, necrosis and cirrhosis of the liver. The dietary factors seemed more consistently to prevent renal damage and were less effective in pre-

venting liver cirrhosis. Male rats appeared more susceptible than female to carbon tetrachloride intoxication under identical dietary conditions.

A somewhat different conclusion is reached by Drill[66] and his co-workers, who report that, with carbon tetrachloride as a hepato-toxic agent, less hepatic injury was reported with a low-protein, high-carbohydrate diet, than with the high-protein, low-carbohydrate diet.

Chew[69] and his co-workers stress the production of acidosis in methyl alcohol intoxication. The treatment included the use of oxygen, sodium lactate solution intravenously, and sodium bicarbonate by mouth. The authors suggest careful observation of the carbon dioxide combining power.

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The Role of the Industrial Physician

EARL F. LUTZ, M.D.,
Associate Medical Consultant,
General Motors Corporation,
Detroit, Michigan

THE PAST 40 years have seen the role of the doctor in industry evolve from on-call company surgeon to full-time plant health officer. His chief interest has changed from repairing industrial injuries to preventive medicine. Now his main effort is in helping employees to maintain their health.

The war with its manpower shortages hastened the appreciation of the manner in which the qualified industrial physician could assist industry. Currently we are confronted with efforts in the direction of socialized medicine and so-called welfare funds. In the face of these conditions and for even more basic reasons which I shall outline, it is believed the role of the industrial physician will expand rather than diminish. Expansion of his responsibilities probably will be in these directions:

1. How he can best help to attain the objectives of the company's over-all personnel program.
2. How he can be of greatest assistance to the employee in need of medical service or advice.
3. How he can cooperate best with foremen and other department heads.
4. How he can improve his own relationships with the personal physicians of the employees and with local health organizations.

Industrial Physician is Impartial

THE physician in industry occupies an unusual position in the management structure. Frequently he is the only professional man in a lay organization. As such he has a certain amount of dignity to maintain because the nature of his service hinges on respect and confidence. It is true, there is a plant official to whom he must report, but notwithstanding, the doctor is almost entirely on his own. He makes important decisions which should be absolutely impartial. The physician who is not impartial shortly loses the respect of the employees and along with it his professional dignity. He then is of little value to the employer or the employee. He must not allow any of his decisions to weaken his professional position any more than a doctor in a private practice would. It would be well if this were pointed out to the doctor at the time he is engaged. His primary responsibility is the health of the worker. His diagnosis and opinions must be based on factual information obtained through examination and laboratory tests.

There have been umpire decisions in General Motors and elsewhere which held that management is obligated to secure competent medical advice acquired through the sound procedures of examination and diagnosis. Once management has fulfilled this obligation, it has a clear right to follow the advice thus obtained even though such advice is contrary to the opinions of other qualified physicians. Naturally, management must use the plant physician's advice in good faith.

The findings of the plant physician have been regarded as binding by the impartial umpires, unless they were shown to be arbitrary, capricious, or unsupported by reasonable evidence. The umpires have held that contrary opinions of an employee's personal physician are entitled to respect, but alone are not sufficient to throw doubt upon the good faith of the plant physician's findings. In view of these decisions and the impartial position the doctor occupies, it is of the greatest importance for the plant doctor to be sure his opinions and diagnosis are based on factual information and free from bias.

Employee's First Impression

IT HAS frequently been said that first impressions are lasting impressions and this is especially true when an applicant presents himself to a plant seeking employment. The employment and medical departments are the first he visits. If the quarters are good, equipment adequate and the examination and interview thorough, the applicant cannot help but be impressed. He cannot help but conclude that here's an organization that does things right and is sincerely interested in the health of the employees.

This is where the applicant first meets the people he labels management. His impression of all management may be strongly influenced by the opinion formed during this first visit and examination, so it is important that the doctor who examines him be capable, courteous and considerate. Qualifications and equipment of the interviewer and all others whom the applicant meets are outside the scope of this paper but like the doctor they also leave lasting impressions.

Duties as Plant Health Officer

THE doctor is the health officer of the plant and, as such, is responsible for identifying and determining the source of occupational disease. It is part of his duty to direct management's attention to such hazards. Furthermore, it is his duty to inform management if control is not maintained. Although the doctor is not expected to collect and make dust counts or chemical analysis of air contaminants, he should be able to recognize such possibilities. He should know how to have a proper appraisal made. In addi-

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tion, as health officer of the plant, he must be interested in the cafeteria and the folks who work there, also in the locker room and the washroom facilities and how well they are maintained.

Industrial Physician as Adviser

THROUGH the years the American family physician has held a position of trust and respect in the community. His rating is close to that of the priest and the minister. In connection with this, let me digress for a moment and speak of one of the weaknesses of our modern-day specialized medicine. I refer to the gradual disappearance of what is known as the "old family doctor." When I was a child, he was an outstanding character in the community. He was a family adviser not only on aches and pains but on all sorts of personal problems. He probably never heard of psychosomatic medicine, but he did a first-rate job of practicing it. If Mary refused to study or if she stayed out late at night, his guidance and influence were often sought. He would be consulted on business ventures, what school the children should attend, etc. I feel that we as individuals liked that sort of relationship. And I know our employees like it. It is a sound industrial relationship.

The industrial physician has a splendid opportunity to play the role of the "old-fashioned family practitioner" in his job in the plant. Even you would be surprised how often he is consulted by employees on problems which have no medical basis. Most of them are personal in nature.

The physician is an ideal person for listening to these problems, as they disappear when met by his sympathy and understanding. For example, one of our doctors tells of an employee rushing in early one morning with this startling statement: "Doc, my wife ran away with another man last night. What are *you* going to do about it?"

I don't know that the doctor was able to do anything about it. I am confident, however, he assisted the man by merely allowing this distracted soul to unburden his mind. The employee knew the doctor was sympathetic and would assist him if he possibly could, and above all would not laugh at him.

Psychosomatic Medicine

DURING the last few years we have heard a lot about psychosomatic medicine. The dictionary defines this $64 word as: "Pertaining to the mind and body relationship, having bodily symptoms of a psychic, emotional, or mental origin."

Psychosomatic medicine, as used in industry, has a broader connotation. It concerns all aspects of industrial medicine in which personality factors are important. When one first meets an employee with a personality problem, one is apt to say, "just another screw-ball." On the other hand an industrial physician, on studying a few of these cases, usually finds that the individuals are just as sick as if they had an organic disease. Then it becomes the doctor's duty to hunt down the cause of the mental strain and relieve it if possible.

For example John Smith was hired as an electrician about three years ago by one of our Divisions and his job required him occasionally to work on scaffolding, cat walks, and other high places. For two years he had a fine record, then he began coming to work with liquor on his breath. Naturally the foreman could not permit a drinker thus to endanger himself or his fellow workers, so he reprimanded John. When he repeated the offense, John was laid off for a few days as a penalty. In the following months his drinking became worse. He grew extremely moody. He spoke to his fellow employees and the foreman only when required. The foreman decided that unless the man straightened out, he would have to discharge him or transfer him to a job where he would be safe.

Here is where the plant doctor entered the picture. The foreman referred John to the doctor, along with a history of the case. The doctor examined the man and found that he suffered from severe depression. At first he refused to discuss his troubles but finally did break down and told all, crying like a child. His was the old old story of tragedy at hame, plus a mistaken sense of guilt.

Here is the story John told. A year ago the only son, 12 years of age, was killed by a passing automobile. The death occurred just after the father had overruled the mother and permitted the youngster to go to a show against the mother's will. A dark night, a child running from between parked cars, shrieking brakes and a crushed, lifeless body.

The mother blamed John and he acquired a guilt complex. To add to his troubles, the wife deserted him a month later, taking their remaining child, a daughter, with her. Left alone, John began to drink. At first one drink gave him relief but as time went on one was not enough, nor two, nor three. "Doc," he said at the end of the prolonged interview, "you are the first one I have ever told," and he showed his relief. "I would like to quit the stuff," he continued. "Can I see you whenever I feel blue?" "Of course," the doctor said, and weekly interviews were arranged. John was given work on a light punch press. He didn't like that job but honestly tried to fit himself to it. In the course of one of his office visits with the doctor, he showed an interest in photography. With encouragement, John took it up as a hobby.

Gradually he came out of his shell. He began to chat normally with his fellow workers. It was evident to the doctor that John Smith was winning his fight, so the day before Christmas the doctor came up with a real Christmas present—a recommendation to personnel that be given back his old job of electrician. John Smith was cured. In situations such as this the foreman is oftentimes a key figure, as he is the first person to notice marked changes in employees. He does well if he refers them to the medical department

for examination and treatment. In some cases the doctor can make recommendations regarding the employee's work which the foreman readily accepts. This may solve the problem. In our experience, the foreman plays just such an important part. In order for the industrial physician to diagnose and treat patients of this type, it is necessary that he have sufficient time available for consultations with employees who need assistance. In other words, he must not be loaded down so heavily with routine examinations and treatment of minor ailments that he has no time to devote to this fertile field.

Re-employment of Veterans

ANOTHER area in which the industrial physician has been of great assistance is with industry's program for the re-employment of veterans. In fact, our veterans consultant believes that the plant doctor has been the key figure in making the program work. It has been the doctor's duty to examine and interview the veteran to determine if he has any physical impairments, or any evidence of mental strain. Having taken a complete history and made an examination of a veteran to determine his work capacities, the doctor is able to advise on selective placement. This is the objective of industry's program for the re-employment of veterans.

Our experience with a selective placement program began in the early days of the war when the manpower shortage was so severe that it was necessary to hire every applicant who presented himself regardless of age, sex, or physical fitness. We learned a great deal during that period. We found that many people who formerly were considered unfit for employment in a factory could, if properly appraised and placed, do just as well on the job as a so-called physically fit individual. Selective placement, as used in the veteran's program, amplified this experience, and it has proved so satisfactory in General Motors that now it has been extended to cover all applicants for employment.

Safety and Medicine

IT IS taken for granted that the plant physician will cooperate closely with all departments but particularly with the safety department in promoting the accident prevention program. The medical director, however, should not be charged with responsibility for safety. If he is, there is a great temptation to stray from his impartial position to protect the safety record.

Our plant physicians and safety directors work together to establish first aid training classes covering artificial respiration, control of severe bleeding, and shock. They also train employees in proper methods of lifting and carrying severely injured persons. In General Motors, the cooperation between safety and medical personnel is gratifying. It goes far in preventing injuries and occupational diseases and in shortening disabilities.

Recently Mr. H. W. Anderson, vice-president of General Motors Corporation in charge of personnel, in the keynote address to our 115 doctors at the annual GM Medical Conference, dealt with the more important aspects of our health maintenance program.* He emphasized the value of education and research in perfecting the sciences and the professions. He pointed out that industrial medicine is akin to other professions in these respects. Several of our plant doctors are carrying on research projects. Perhaps you, too, could encourage your doctors to do likewise, either on subjects which are of particular interest to them, or which you feel may be of special value to you in your activities. A little encouragement by management may be all that is needed to get your doctor working on a subject which has been smoldering in his mind for a long time.

Here are a few of the research studies which have been undertaken by our doctors:

A study of foundry workers' health so far indicates that where proper ventilation and safety devices are installed, the foundry workers' occupation can be made no more hazardous or disagreeable than that of any other factory workers.

Another research project, this one on dermatitis, began in 1944 and ended in 1946. It pointed out that "Cleanliness is next to Godliness." This study revealed that the most important factors are thorough washing by the worker and the wearing of clean clothes.

Here are some possible tangible benefits from this study: In 1946, General Motors' hourly employees worked 404 million man hours with a total number of 1,552 days lost from dermatitis. In 1947, General Motors' hourly employees worked 536 million man hours, with a loss of only 923 days from dermatitis. This shows a decrease in lost time of over 55% or approximately four days lost in 1946 as compared with two days lost in 1947 per million man hours worked. Other subjects under consideration at the present time are ailments from repetitive motions, hernias, back ailments, frequency of periodic health examinations, and foot trouble.

Last of all is a project which appears most important—conditioning the elderly employee for retirement. There are a multitude of others, investigation of which will do much to enhance the value of the physician to industry.

Responsibility for Medical Care

IT IS realized that some companies offer complete medical care to their employees and a few extend this care even to their families. In isolated communities where the plant physician is the only doctor available, this may be unavoidable. We have had no experience with such a program. Our belief, however, is that in areas where private doctors are available, every employee who presents himself to the plant medical department is entitled to a health examination. It should be sufficiently thorough to determine

* See INDUSTRIAL MEDICINE, 17:2, 61-64, February, 1948.

whether his ailment is occupational or non-occupational in origin. If it is occupational in origin, the medical director is responsible for seeing that the employee receives adequate curative treatment. If the ailment is deemed non-occupational in origin, emergency care may be given to assist the employee in finishing the shift. It is understood that subsequent care, of course, will be furnished by the employee's family doctor. In some instances of a serious nature, such as an attack of acute appendicitis, the family doctor may even be called and arrangements made for the employee to go directly to a hospital to save time.

Physicians in General Motors are prepared to furnish to the personal physician of an individual employee a report of the physical examination and any laboratory tests which may have been made by physicians acting for the corporation. This will be done upon written request by the employee involved.

Recommendations of Private Physicians

FREQUENTLY, notes are received from private physicians stating that an employee is or is not capable of returning to work. The personnel department and plant physician should respect the recommendation. They should carefully review the situation when such a note is presented, but, as held by the umpires, the opinion of the private physician alone is not sufficient to throw doubt upon the good faith of the plant physician's findings. The plant physician's opinion is based upon the physical condition of the employee and the actual requirements of the job. It is rare indeed to find a private physician who is well informed about the working environment in any particular plant. All too often, on investigation, we find the personal physician has been imposed upon by an employee attempting to gain preferential consideration in placement.

Statements have been made by employees both minimizing and exaggerating true working conditions, depending on whether an employee was trying to return to work after an illness or receive a leave of absence because of an illness.

Recently, efforts have been made to acquaint private practitioners with actual factory conditions by holding in-plant meetings of local medical societies. A dinner is among the attractions. A plant walk is always included, and industrial hygiene controls of occupational disease hazards are pointed out. Many doctors have expressed amazement at the excellent working conditions in the plants.

Private and Industrial Physician Relationship

I WOULD also like to say a word about the relationship of the private practitioner and the industrial physician. During 15 years of private practice one learns the feelings and problems of the private physician. One does not sit around a hospital dressing room or cloak room very long without hearing some very frank opinions on both sides, but the differences have diminished a great deal of recent years. The private practitioner, in accordance with his code of ethics which is desirable and necessary, is duty-bound to wait until sick people consult him before he can render service. He is constantly seeking, diagnosing, and treating abnormal conditions.

On the other side we have the industrial physician endeavoring to keep people well. He is able to offer health information and educational material when the employee is in a receptive mood, and, if something abnormal is detected, recommend that the employee consult his private doctor. This can be done without in any way violating the physician's code of ethics.

More private physicians are coming to realize that instead of the industrial physician taking business away from the private practitioner. he is actually sending business to him.

Forty years ago industry provided only minimum medical attention, often engaging the first doctor to be located, regardless of his ability. Some of the results were poor, and many people got an opinion that full-time industrial doctors were poor physicians. This is no longer true. Today there are just as many well informed, capable doctors practicing industrial medicine as there are in any of the other specialties.

Some industries have engaged physicians, untrained in industrial medicine, on a part-time basis. On the surface, this may appear economical but any probable savings may be eaten up by added costs from time lost by employees seeking medical attention, delayed service, and increased incidence of occupational diseases which cause higher compensation payments.

I would now like to express three *don'ts* regarding the industrial physician:

First: Don't permit the doctor to look at prospective applicants for employment through the eyes of a claims agent. Primarily, it is his responsibility to determine the individual's employability on three main counts:

Will he be a risk to himself,

Will he be a risk to his fellow employees,

And, is he physically and temperamentally able to do the job.

In other words, the doctor should practice selective placement.

Second: Don't let the doctor be a compensation attorney. Furnish the medical facts to the man whose job it is to make the decision in such matters. Let him do any necessary arguing.

Third: Don't permit your doctor to become embroiled in controversy over grievances. Don't permit union representatives to run to the doctor to discuss grievance matters, since there is no room for collective bargaining in the case of sound decisions made by the plant physician.

Keep his relationship with employees on a *professional* basis. Have him give the director of labor relations the facts. He knows how to handle disputed matters with the union.

Thus, it is seen that the role of the industrial physician as plant health officer is important. He stands ready to combat an employee's phy-

sical and mental ills. He frequently acts as counselor and family adviser. He assists in placing the employee on the proper job and maintains an ever watchful eye over his working environment. He promotes good public relations and more recently has taken an interest in research projects which should pay dividends.

The industrial medical specialty is gaining recognition not only with industrialists but also with educators, public health officers and doctors. More and more companies are employing full-time industrial physicians. They are expanding the scope of their health maintenance programs and some have engaged industrial hygienists to assist the physicians in collecting technical data on environmental exposures.

Several universities have inaugurated post-graduate courses in industrial medicine, others have established fellowships, and a few are even offering undergraduate training. Some hospitals are discussing the advisability of appointing a resident in industrial medicine to work in co-operation with local industry. General Motors has a plan for training a limited number of young doctors who are interested in industrial medicine and who have just completed their internship. This plan provides for a one-year in-plant residency which permits doctors to learn industrial medicine while they earn.

The specialty of industrial medicine has reached maturity, and the industrial physician deserves recognition, respect and status on a plane with the cardiologist, the obstetrician, the surgeon, or any other specialist.

Abstract of Discussion

IN LIEU of the usual discussion, the audience was requested to submit questions which, with DR. LUTZ'S replies, were as follows:

QUESTION: Do you have a definite hour of the day for a sick call?

DR. LUTZ: The General Motors health maintenance program does not designate hours for what is known as "sick-call" at which time doctors and nurses are in readiness to serve ailing employees. Better than that, employees are permitted and encouraged to seek on-the-job medical advice and service when they need it during their hours at work. Of course, General Motors provides only any temporary care for non-occupational ailments but it makes advice on health always available.

QUESTION: Will you comment on the problem of malingerers who may use the availability of the company physician to avoid work?

DR. LUTZ: The fact that a physician is available and has opportunities to study his cases and job environments serves, in my opinion, to discourage what is known as malingering.

QUESTION: Do you find where an employee's own physician differs with the plant physician that a third physician as referee is a desirable and practical solution rather than the usual arbitration?

DR. LUTZ: The General Motors health maintenance program does not provide for arbitration of medical decisions. The plant physician, by virtue of his specialization in the practice of industrial medicine and his considerable knowledge of conditions in the plants, is presumed to be better qualified than a personal physician who has no knowledge of plant conditions and little knowledge of industrial medicine. The decision of the plant physician is, therefore, regarded as final.

QUESTION: Should an employee's health status represent a confidential relationship between the employees and the physician? If so, how is the employee to be protected against exposure to job conditions that are adverse to his conditions of health? If not, will he not feel that the doctor's examination results will be used against him as regards more responsible work, opportunity for promotion, and so forth?

DR. LUTZ: The General Motors health maintenance program provides for a confidential relationship between the employee and the physician, and selective methods of job placement, which are used in placing employees who have physical impairments, provide for the maintenance of that confidential relationship. If, however, a doctor is of the opinion that the foreman or the management should know of an impairment, there is no objection if the employee gives his permission and if it is to the interest of the employee, he usually has no objection. The medical record is available to employee's personal physician on request of employee.

QUESTION: What does GM do with people hired of necessity during the war, who are now below regular physical standard requirements, and who will soon be serious health problems?

DR. LUTZ: As long as they are able to work they are transferred to jobs which will match their capacities. Selective methods of placement are very helpful in providing employment for the so-called handicapped. General Motors does not like to call them handicapped because, when properly placed, people who have impairments cease to be industrially handicapped.

QUESTION: Do you favor periodic physical examinations of all industrial employees?

DR. LUTZ: Yes. Some more than others, depending upon their conditions of health and job environments. The periodic examination program advocated by the American College of Surgeons is a good one.

QUESTION: Your paper has assumed a plant to be large enough to warrant a full-time physician. What is the answer for a small organization?

DR. LUTZ: A small organization can obtain the same kind of service as General Motors provides in its health maintenance program through the employment of part-time qualified physicians. The only difference between the large plant and the small plant is in the quantity of service it requires. The quality should be the same in each.

QUESTION: In pre-employment examinations, what technique is effective in identifying unstable or neurotic individuals in normal physical condition?

DR. LUTZ: There is no technique which permits the identification of unstable or neurotic inividuals in the short time assigned to the pre-employment examination. However, the experienced industrial physician is able to recognize certain indications of instability or neurosis which suggest the need of further investigation. The experienced industrial physician, incidentally, is much more proficient in psychiatry than he is credited with being. He may not possess the special techniques of that specialty but, frankly, his lack of them seems to be helpful. For, after all, psychiatry in industry is largely an application of good judgment in human relations.

The Effective Treatment of Leg Ulcers in Puerto Rico

S. ARANA-SOTO, M.S., M.D.,
Chief, Rehabilitation Clinic,
State Insurance Fund,
San Juan, Puerto Rico

WE WANT to report on the successful treatment of leg ulcers. Our cases represent a very good cross-section of such cases in this Island, for we are the only one to give special attention to peripheral vascular diseases in Puerto Rico and the patients come from every part of the country, both from urban and rural districts. They belong to all social strata, to black and white and mixed races, to both sexes and to different ages. Ulcers are of all sizes and descriptions. It is the uniformity of good results in such a wide variety of conditions that is significant.

Seventy per cent (70%) of all the cases seen in the last 18 months are women. The following table shows the percentage of cases in the different 10-year age groups.

Age groups —	0-19	20-29	30-39	40-49	50-59	60-69	70-79
Per cent —	2.3%	4.7%	17.8%	27.3%	26.1%	14.2%	7.1%

Seventy-one per cent (71%) of all cases fall between the ages of 30 and 59.

Most of all ulcers were of long duration; from several months to as long as 36 years—22% were less than five years old; 24% were from five to nine years old; 24% from 10 to 14; 9% from 15 to 19; 8% from 20 to 24; 7% from 25 to 29.

We have tried to determine the cause of these ulcers. In 50% of the cases varicose veins, of different grades and location, were present but they seemed to be responsible for the ulcer only in a small number of patients. They seemed only to aggravate the condition. In 22% of the cases there was a history of trauma—usually a contusion, mosquito bite, scratch—which seemed to be the direct and immediate cause of the condition. But the most common cause seemed to be a phlebitis, usually a post-partum milk leg; 29% of the cases gave such a history. In about 8% of the patients the ulcer had developed over an area of tropical recurrent lymphangitis which seemed to be directly responsible for the ulcer. In 9% of the cases the ulcer was complicated by such attacks of lymphangitis, which is extremely common in the country. In some cases the attack occurred during treatment. In no case was filaria suspected or were microfilariae found in the blood. In some patients there was a history of phlebitis, lymphangitis and trauma, which all seemed to contribute to the existence of the ulcer. In some cases there was a background of syphilis or diabetes but the determining factor seemed to be, as in most of the other cases, trauma and phlebitis.

Most of the patients abandon treatment early because of the distance, lack of funds, negligence, etc. Of all our cases only 40 continued treatment for a reasonable length of time. Of these, only two patients were not completely cured of their ulcers. Complete cure was obtained in an average of 47.5 days (less than seven weeks), that is, with an average of only eight treatments, these being given weekly. As may be seen from the following table, complete cure was obtained in the majority of cases in from one to seven weeks (two to eight treatments), 18 weeks being a maximum.

No. of treatments	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
No. of ulcers	1	2	7	2	8	5			2		1	1	3	2	1	1	1	

This is a very quick result in ulcers of the etiologies where many patients have difficulties in following our orders and in keeping their appointments, patients who are poor and undernourished, their diets being insufficient and unbalanced. The cases reported by Collens and Wilensky, in their book, treated by short wave diathermy and rhythmic constriction, required much longer and much more frequent treatments. The same applies to the cases treated in France and Spain during our stay there from 1930 to 1935 and to those treated in several varicose vein clinics in different hospitals in the United States. In our opinion, the difference in the duration of treatment is due either to climatological conditions or to a more individualized and careful treatment or to both.

The main points in the treatment are: (1) hygiene of the lower extremities; (2) bandaging; (3) treatment of infection; (4) treatment if necessary of the general condition of the patient.

Hygiene of the extremities includes fundamentally avoidance of sitting and standing postures, elevation of the legs, plenty of walking.

Bandaging is done carefully, from toes up to the knee, with even pressure, avoiding folds, using plain or adhesive elastic bandages, at least three inches in width, according to the season. No part of the foot or leg, except the toes, is left uncovered. Adhesive bandage is used when it must stay on for a long period (one week or more). Plain bandage may be used when the patient may be seen more frequently or learns to put it on himself, which is rarely the case. Routinely a bandage is changed once a week, more often if there is pain or abundant secretion, or less often if it stays on firmly and the patient feels well.

Treatment of infection may be a delicate matter. Common pomades and salves are useless and

contra-indicated because they increase maceration. Sulfathiazole, tyrothricin, urea ointments are very useful, and may have to be used alternately.

Treatment of the general condition of the patient includes, of course, that of diabetes, syphilis, arteriosclerosis, kidney disease, etc., but more often of obesity and general debility. Vitamin C is given to all ulcer patients, who are instructed to eat at least six oranges a day. Oranges are abundant in Puerto Rico.

The patient receives complete instructions when seen for the first time. Very seldom is he allowed to take off the bandage. Usually it gets loose because of the subsidence of edema, and there is an abundant secretion from the ulcer. These and the curiosity of the patient are the reasons why the bandage is taken off; otherwise it may be left on for a longer period of time as is the case when edema and secretion subside and the volume of the leg is stable. Bandaging, by the doctor himself, is very careful and individualized. If poorly applied it is worse than no bandage at all. Plain bandage or adhesive, full or half coated, is used according to the season. Or even no bandage may be applied for some time until maceration of the skin stops.

Ulcers are not cleansed. Usually, when seen for the first time, they are covered with a thick coat of sulfathiazole powder or of different powders and pomades. These are left on and allowed to disappear by themselves. Then alone are any drugs applied. Sulfathiazole powder must be used in small quantity and in the very fine state. It must be sprinkled over the lesion through a piece of gauze, otherwise it causes pain and hinders cicatrization. Careful and frequent inspection is necessary to determine if the drug is doing good. If it is doing any good at all, it is continued. These topical applications are necessary in only about 50% of the cases, but in these careful observation and individualization are necessary. Treatment must be persevering; even if, for a time, the ulcer itself does not become smaller, the patient feels better and goes about his ordinary occupations, and bandaging and the same topical applications must be continued.

Varicose veins, even if directly responsible for the ulcers, are treated after complete healing of the ulcer. Varicose ulcers usually heal as quickly as others. Treat the ulcers first. Varicose veins are treated later.

Numerous pustules of folliculitis are often seen under the bandage. They are of no importance. Sometimes attacks of lymphangitis occur under the bandage. They subside quickly. Treatment must not be interrupted.

Surgery was never found to be necessary. Thick borders usually melt away and no circular or radiating incision or curettage or excisions were ever necessary. Skin grafts were never used. As a matter of fact, ulcers which had been grafted were sometimes much more difficult to heal.

Complete bed rest is seldom required and when instituted it should never last more than a few days, only just until pain and acute inflammation subside.

Topical applications such as are to be used daily are of no use, since the doctor himself removes the bandage and only once a week.

Physical therapy, except bandaging which is a physical measure, was never found to be necessary. Copper ion transfer, diathermy, rhythmic constriction, heat or U.V. were not used. And this in spite of the fact that we do physical therapy and have complete equipment and personnel. On the other hand, our impression is that U.V. should be given a good trial in such ulcers as do not heal by the method here described. The application of a rubber sponge, as described by Ochsner and Mahorner in their book, is decidedly beneficial in a certain number of cases.

We felt that these points must be stressed. Medical students are very often under the impression that there is nothing really effective to be done for the leg ulcer patient. Later, in practice, they read about numerous treatments but, because of their bewildering variety and after an incomplete and hesitant trial, the new methods are abandoned. The object of this paper is to show, first, that practitioners can treat leg ulcers successfully and, second, that they can do it in a relatively simple manner. In continental United States results should be better than in Puerto Rico for there living conditions are better, patients are well nourished and well dressed, they have a higher income, and enjoy better treatment facilities.

SUMMARY: The successful treatment of all varieties of leg ulcers in Puerto Rico is reported. Complete cure was achieved in an average of seven weeks (eight weekly treatments). The mainstays of treatment are adequate mechanical support and control of local infection. The high percentage of successes must be attributed to careful individualization of cases. Surgery and physical therapy are usually not necessary to achieve very good results.

The Safety "Engineer"—The Man Without a Training

JEAN SPENCER FELTON, M.D.,
Medical Director,
Oak Ridge National Laboratory,
Oak Ridge, Tennessee

THE march of technical advances in the atomic age has demanded the integration into industry of highly trained scientists, engineers, and administrators. Whereas once a high school education was the acme of upper level learning, the doctorate today has become a must for the youth seeking his place in the industrial scene. The entire background picture of pre-job training has been altered so vastly in the war and postwar years, that the individual with the "general education" and the one with no education, are almost trade equals when considered for placement in commerce or industry. With the establishment of apprentice training programs, the growth of extension courses, and the return to school by the ex-servicemen the value of further basic and advanced equipping for the job has been demonstrated. In brief, the man without the planned career is lost in competition with the one whose formative years were marked by intelligently outlined academic pursuits.

Into this present-day industrial picture comes the safety engineer, veritably a man without a training. A field demanding of specific skills, techniques, and departmentalized knowledge, safety engineering is seen to be filled in nearly all its ranks by men job-trained, but lacking almost completely in workers who have a specialized formal education. Several years of contact with industry's safety force have revealed the accident prevention staff to be peopled by ex-inspectors whose preparation for their jobs has consisted exclusively of serving a brief period of time under comparably inadequately trained personnel. The goal of every safety department is the minimizing, if not the elimination, of accidents and the injuries attendant upon these accidents. To accomplish this mission the safety group must work on an equal level with all departments of a plant from top management to the individual employee. Yet, what training has qualified the safety engineer to meet his fellow department heads and execute successfully his program? The average safety engineer today carries the latter designation through courtesy and the desire for prestige primarily, and through training very secondarily.

That this situation is almost industry-wide is commonly recognized when the backgrounds of our safety contemporaries are studied. Several have drifted in from totally unrelated fields—many have high school educations only—many have no awareness whatsoever of the assigned tasks of modern personnel, industrial health or human engineering techniques. The war produced rapidly indoctrinated accident prevention staff members at a time when needed. The calmer activities of peacetime, however, reveal in sharp relief, the flaws in so vacuous a training. Accident prevention in its true sense is an assembly of information from many co-existing specialties and a utilization of the more related factual data, producing a multi-faceted industrial knowledge that allows study of *the man behind the accident* and not just the superficially connected and recently investigated accident events. To absorb such knowledge and convert it into a workable armamentarium calls for the ability to think, analyze, locate and use source materials, and plan. An honest appraisal of current safety methodologies will reveal a great lacking of this approach to one's job.

WHAT training should the safety engineer have to place him on a professional level that will allow him not only to accomplish a better and more scientific job, but also gain the recognition and appreciation that should be his due in the staff organizational scheme of industry? It must be multi-fold and sufficiently encompassing so that the individual will know the workings of the employee as he relates to his industrial environment. The group living of industry presents many features that must be understood, for the worker is more than a man who performs daily one assigned task and tomorrow takes another. He is, firstly, a member of a family that is supported by the successful execution on the job of certain specialized aptitudes, skills, training, and experiences, as they are tempered by personality factors, mental equipment, prejudices, and attitudes. He is concurrently representative of a specific craft, trade, or job family. He is a member of a trade union. He is a man with a work history. And finally he is a person who must get along with the fellow at the next bench, his supervisor, his superintendent, the safety "man," the industrial physician, the time clock, and, not least of all, with himself and his own emotional problems. To understand the whole man, one needs a broad education that will allow one to know the worker in his environment and realize how each may influence the other.

The various disciplines required can be categorized as follows:

A. *Basic Disciplines*:
   1. Mechanical engineering.
   2. Industrial phsycology.

B. *Auxiliary Knowledge of the Aims of:*
   3. Interviewing techniques.
   4. Public relations methods:
      (a) Intelligent writing.
      (b) Public speaking.
   5. Statistical methods.
   6. Personnel practices.

7. Industrial health methods.
8. Industrial hygiene mtehods.
9. Industrial psychiatry and accident proneness.

(The salient features of the job such as personal protective devices, machine guarding, etc., are a stipulation.)

Certain fundamentals such as engineering and behavior of the worker are mandatory. Additional knowledge is needed of those fields of learning which will permit the safety engineer to do a better job, backed by an intellectual appreciation of the many causative factors entering into accidents. He must know how to get his facts through skilled interviewing; he must be able to treat his data statistically in order to evaluate the success or failure of his program; and he must be able to have his program understood by the worker through public relations methods adapted to the local needs. He must verbalize through the written and spoken word so that good-will can be established and maintained. These approaches are necessary so that a safety conscious employee will result to whom safety means more than the poster on the wall, the question asked by the industrial nurse, or the departmental frequency rate. In order to work effectively with the health service in industry, in aiming jointly at the goal of keeping the worker on the job, he must understand the methods of industrial medicine in practice, the sampling and control techniques of industrial hygiene and industrial hygiene engineering. He should manifest an acute awareness of the psychological factors producing the accident-prone individual, and assist the frequently desk-bound industrial physician in discovering these individuals in the plant. Added to this, the matching of the worker to the job, or selective placement, must be known and understood.

The foregoing may seem a curriculum overpowering and weighty, but without these concepts and the knowledge upon which they are built, the job the safety engineer will do will be superficial, skimming the surface only, where a deep sound is required. The inadequately trained staff must be replaced by personnel equipped for the important task that is theirs in industry—life conservation. The procedure of making accident prevention workers out of guards, drug salesmen, Boy Scouts, and varied unrelated occupational categories must be re-built and revitalized so that safety engineering can be granted the prestige that any profession demands. Only then, will the full cooperation of management, medicine, and personnel be had. When that point is reached, "safety" will have arrived.

THE National Safety Council, through the proposed long-term program of the Industrial Department, envisions a continuation of "the inclusion of safety instruction in engineering colleges through work with the American Society of Safety Engineers, and in cooperation with the U.S. Department of Labor, the Veterans of Safety, and the Society for Engineering Education." More universities must include in their curricula specialized courses of the type developed in the four schools where the Council's sponsored program was developed so effectively. Recognizing, as we must, that the majority of men engaged in safety work are still relatively young and will be engaged in this field for many years to come, the inference stands that these individuals, besides the younger groups now in school, must be re-educated to do the job the scientific way.

Such a program is, perforce, long and ideal, but if safety engineering is to attain ever the position it should have in industry, free from apologia, then a sound and broad formal training must be demanded of everyone "in the field." Medicine accomplished this ideal by eliminating the diploma mills and elevating the standards of the remaining ethical schools. Safety engineering, likewise, can become a respected implementation to industrial management in helping meet production schedules through human understanding at work.

A Psychiatrist Looks at the Causes of Alcoholism

ROBERT V. SELIGER, M.D.,
Fellow of the American Psychiatric Association;
of Johns Hopkins Medical School; Director
Neuropsychiatric Institute of Baltimore

BECAUSE alcoholism is symptomatic of so many varied personality and behavior disorders, psychiatrists are becoming more and more interested in this serious problem.

The medical definition of an alcoholic—as distinguished from the social drinker—is one whose drinking harmfully and definitely interferes with one or more of his important life activities. He may lose time from work due to drinking, or the quality of his work may suffer, or his home-life harmony may be disrupted, or he may so speak and generally conduct himself that his reputation and relationships with others suffer. In spite of evidence, clear to other people, that he is having difficulty with alcohol, he himself usually does not recognize the seriousness of the situation, partly because of the prevailing social attitude that having a drink or two is a usual pleasant custom, an attitude that he has absorbed and that constitutes a form of "social pressure" until he can reach the place—if his brain is intact and his thinking straight—of admitting that, just as the diabetic cannot handle sugar, so he cannot handle alcohol without adverse results.

Now, there are many types of alcoholics, and the need for careful discrimination is important both for actual treatment and placement and for a scientific application of the medical statement that alcoholics are sick people. In previous times, those with an alcohol condition were usually considered as a group to be "hopeless drunks and bums." This attitude, we know it is not accurate, that not all with an alcohol problem are "hopeless," and that many persons with this problem have high intelligence, fine, delicate make-ups, and are among our community and social leaders. In the same way, in stating that "alcoholics are sick people" we must break down the generalization.

To be of aid to the individual and to his family, one must first understand that alcoholism is symptomatic of psychopathology—disorder or illness in the personality functioning, that the pathology may be primary, or secondary, that physical complications may be in the picture (organic brain damage or deterioration, etc.), and that in order to attempt to treat the patient we must know about his personality make-up presence of any major psychiatric illness, or any minor psychiatric illness, and about his actual life-setting and circumstances.

Before discussing this in more detail, it may be helpful to present a few facts about alcohol itself, and about types of alcohol reaction pictures.

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Chemical and physical effects of alcohol:

Pharmacologically, alcohol acts first as an irritant but is primarily a narcotic and depressant. It depresses the "higher" brain centers, impairing or removing temporarily the brake-power of judgment, discretion, and control; and thus primitive impulses and emotions are set free. Actually, alcohol does not make one "tight"; it makes one "loose."

There are individual differences in so-called "tolerance"—ability to drink without subjective or objective behavior, motor, or other changes; differences also for the same individual, depending on the amount of food in the stomach, emotional situations, fatigue elements, sugar metabolism, and so on; and there are different individual reactions to various alcoholic beverages.

In general, however, when alcohol is ingested it is quickly and about equally absorbed through the stomach into the body tissue. Some alcohol is stored in the liver. (When damage or scarring occurs. an unusual amount of alcohol reaches the brain so that a very small quantity of liquor results in drunkenness, abnormal, or dangerous behavior, and often leads to chronic alcoholism with alcohol gastritis, atrophic cirrhosis of the liver, and circulatory derangement.) Alcohol is also oxidized through the lungs and excreted through the kidneys; if these organs are overtaxed, dysfunction or disorder results. Finally, after these steps in the process have taken place, alcohol enters the spinal fluid. There, coming in contact with the cells of the central nervous system, it produces the following physiological changes in functioning:

Poorer coordination of thought and body action; diminished acuteness of sensory perception; delayed or weaker motor performance; more frequent errors in precision work; diminished physical efficiency.

Pathology of Alcoholism

FORMERLY, alcohol was thought to cause definite heart trouble, kidney trouble, and various other organ pathology, but there has been little scientific evidence to substantiate these views. In addition to the symptoms resulting from an acute drinking bout, such as a thick-coated tongue, bloodshot eyes, and a gastritis of varying degees (all of which are temporary), most of the pathology, as such, is found in disorders in the neuropsychiatric field. This includes encephalopathies of various types, neuopathies, and behavior disturbances (psychopathology), evidenced by personality, emotional, or mental deviations from the individual's usual behavior or that commonly accepted as usual by society.

Psychopathology

THE following are types of reactions in which alcohol plays a very important part in producing the clinical picture. (In most cases these are associated with vitamin deficiencies because of inadequate food intake while drinking.) With changes in the cell-tissue and a lowered resistance to alcohol, drinking habits plus time plus strains of life produce the following behavior pictures of chronic alcoholism that are most commonly seen:

1. Acute intoxication with excitement;
2. Acute intoxication with stupor;
3. Acute intoxication with convulsions;
4. Delirium tremens;
5. Acute and chronic hallucinations;
6. Mental deterioration and dilapidation;
7. Korsakow's psychosis;
8. Personality and ethical deteriorations;
9. Chronic depressive reactions;
10. Paranoid developments.

Psychodynamics

SINCE alcoholism is a symptom of a personality illness, or a more serious psychiatric illness or disorder, one attempts through careful examination to uncover the causes and/or psychodynamics producing this symptom, which may be evidence of primary psychopathology or of secondary psychopathology, or of chronic alcoholism as above described. For purposes of convenience, we can summarize these as follows:

1. As an escape from painful life-situations;
2. As an attempt to escape from one's self—evidence of maladjusted personalities;
3. As a combination of (1) and (2);
4. Evidence of neurosis;
5. Evidence of psychosis;
6. Evidence of feeble-mindedness;
7. Evidence of psychopathic personalities;
8. Evidence of some epileptic conditions;
9. As a result of heavy social drinking, habit. time, body changes and strains of life;
10. As an escape from incurable physical illness.

The individual "psychodynamics" of why people drink is a question now productive of so many answers that the whole issue of treatment including prevention has become rather obscured. Individual motivations for excessive drinking may be summarized as follows:

1. A self-pampering tendency, which reveals itself in a refusal to tolerate, even briefly, any unpleasant state of mind—boredom, sorrow, anger, disappointment, worry, depression, dissatisfaction, and feelings of inferiority and inadequacy.

A childish demand for "I want what I want when I want it," perhaps expresses the attitude of many alcoholics towards life.

2. An instinctive urge for self-expression without the determination or staying powers to organize this urge into creative productive action.

3. A more than usual craving for emotional experiences which call for the removal of intellectual restraint.

4. Powerful hidden ambitions without the necessary resolve to take practical steps to attain them, with resultant discontent, irritability, depression, disgruntledness, and general restlessness.

5. A tendency to flinch from the worries and responsibilities of life and to seek escape from reality by the easiest available means.

6. An unreasoning demand for constant happiness or excitement.

Alcoholism is also felt to be evidence of an escape from reality, or of a maladjusted personality, of latent or overt homosexuality, or of self-destructive tendencies. One feels that any of these interpretive conclusions verifies the presence of anxiety, hostility and/or tension; and psychiatric probing by various methods may bring out as their cause:

1. Some early traumatic event.

2. Disturbing experiences at certain periods of life which the individual's personality was unable properly or satisfactorily to assimilate.

3. Identification and imitation factors, rather than an inherited disposition towards alcoholism.

4. Conflicts causing "pent-up" charges which require narcotizing either the anxiety itself or the anxiety-controls.

Examination

OBVIOUSLY each individual presents an individual problem and must be treated on this basis. However, in general treatment (including placement) methods can be described as follows:

First of all, one wishes to determine what type of psychiatric problem one has to deal with; how much deterioration is present; how serious is the extent of the drinking; whether the individual really wants help. Remembering that a man or woman with an alcohol problem may come or be brought in any stage from that of acute D. T.'s to that of the remorseful hangover period, and that the source of referral may range from the jail to the president of the company (or the president's wife), the first step is to deal practically with the problem at the time. The method of selection follows the lines enumerated below:

1. The individual who desires to abstain but who is unable to do so by himself. This patient has good intelligence, some maturity in his make-up, and his life habits and contacts indicate stability. This type is to be handled by extra-mural or office therapy of regular, frequent visits which are the patient's responsibility to keep, and sedation as indicated.

2. The individual who desires to abstain but who is unable to do so by himself. This patient has good intelligence, some maturity in his make-up, but his life habits and contacts are poor. He should therefore be placed in a non-institutionalized farm arrangement, where psychotherapy, including help and guidance away from his contacts, is started.

3. The individual with good intelligence and

rather immature make-up who should abstain but does not desire to do so. Most in this group have poor habits and contacts, although some do not. This type should be placed on an alcohol farm, sanitarium, or hospital under the Inebriate Act, for a definite period of time.

4. Korsakow's psychosis and alcohol deteriorated patients should be treated in mental hospitals permanently.

5. Individuals with delirium tremens and acute hallunicinosis should be placed in acute psychopathic hospitals and then studied in the way described for future handling.

6. Feeble-minded individuals with a history of repeated arrests, commitment to the workhouse or house of correction should, after careful examination, be handled by the penal system.

7. Chronic alcoholics should not, of course, be treated in general hospitals, which are unequipped to handle this problem, where treatment is usually mere de-saturation and discharge at a time when the individual is psychologically demobilized and ready for another bout. This pattern of acute intoxication, brief de-saturation period and resumption of drinking, is easily established and leads with more or less rapidity to involvment of the central nervous system. It is felt that this type of superficial therapy has contributed to a great deal of the fatalistic attitude of some lay and medical groups about treatment of alcoholics in general, and to the feeling that "all drunks are hopeless."

This method of selection is based on data obtained from the patient and/or members of his family, social service or other agencies. As in any psychiatric examination, one needs to know all the important life details and facts. With the non-intoxicated, non-deteriorated patient, who may be interviewed in the office, or at the hospital after he has cleared up from the effects of drinking, a complete history is taken from birth to the present. This should include the patient's place in the family group; development data; the presence or absence of disturbing behavior or situations in childhood, adjustments in school, vocational record, marital status, sexual activities and attitudes, religious habits and feelings, financial status, family situations, and general health throughout life (including details of major illnesses or operations or accidents), and a close survey of the present life situations and persons involved. A psychiatric examination also includes formal mental status studies of general behavior and habits, activities, mood, special preoccupations, sensorium and intellectual resources, and insight. To determine the presence of any organic pathology, a physical and especially a neurological examination should be made, with specific laboratory tests as indicated. A member of the family, or a close friend, should be interviewed in order to obtain objective data about the drinking problem, drinking behavior, and general personality of the individual, with emphasis on his assets and good qualities as much as on the difficulties his drinking has caused. (The examination may also include personality depth-studies through use of the Rorschach analysis or the Murray Thematic Apperception test. The sensorium and intellectual resources are further tested by the Kohs Blocks test, the Wechsler-Bellevue Adult Intelligence Scale, and so on.)

Based on all these findings, one should prepare a more or less detailed summary of the patient's assets and liabilities to aid in understanding and medically treating him as an individual. A similar examination-interview with the mate is extremely important to help find out how a great a part, if any, the friction of personalities has played in contributing to the production of strains or out-and-out irritants that the individual sought to escape from via drinking.

Treatment

NO ONE who has had an alcohol problem can ever again drink "socially." Science does not yet know exactly why this is so—what change has taken place in cell tissue or spinal fluid resistance to the toxin—but pragmatic experience has proved beyond doubt that once a person's drinking has crossed the line into pathological drinking, he can never "handle alcohol" again. He can reintegrate his personality and often achieve more than even in the early "social drinking" days; but he must be a total permanent, forever-after abstainer.

These facts must be bluntly stated at the outset, and accepted by the patient if desired results are to be expected. Frequently it is possible to modify poor vocational adjustment, or irritating marital situations involving sexual incompatibilities, parental conflict over the management of children, etc. The patient himself may not be conscious of the strains of all these things upon him. When it is not possible to modify the situation, it is often possible to change the patient's attitude toward the difficulties he has to meet. Many a person becomes morbidly self-accusatory and fatalistic because of what he considers his failure to modify the unmodifiable. Such an individual may be greatly helped by mutual discussions, constructive criticism and wise guidance.

The goal of treatment therefore is to teach the individual who can be helped, to learn how to live without ever again using alcohol in any form.

This involves usually a rather lengthy rehabilitation period of habit-training, re-directions in life, and helping the patient to learn intellectual control over mood (emotional) domination. Individual therapeutic interviews utilizing the principles of ventilation and desensitization on a distributive analytic basis help give the individual a chance to let off steam and react less strenuously to previous upsetting situations or conflicts, and also give him insight into some of his modifiable drives and attitudes that cause him difficulty. He is indirectly taught to accept tolerantly and maturely other people's person-

alities without feeling unnecessarily "blocked" or frustrated, and a careful appraisal of his personality, liabilities and assets helps him to reorganize his views, values, goals, and capacities along more constructive, satisfying productive lines. We must remember that while many individuals drink to relieve various feelings of discomfort or psychic pain, others drink as part of a more serious psychiatric picture involving mood-swings or schizophrenic features. The need of thorough examination, and understanding of the underlying personality illness or disorder cannot be over-emphasized.

For all these reasons, interviews with the husband or wife or family members assume major therapeutic importance. Many a poor result of treatment is attributable to lack of any insight on the part of those closest to the patient; they, too, must learn to accept unmodifiable facts of life and to utilize principles of emotional hygiene in their interpersonal relationships.

Success in Treatment

EXPERIENCE with alcohol patients indicates that successful results are accomplished by:

1. Careful selection of patients: that is, those who desire to learn how to stop drinking, who have average or better intelligence, some level of emotional maturity, undamaged brains, with place of treatment depending on their business, home, social contacts, etc.
2. Personality of the psychiatrist, who should be plastic, sympathetic, tolerant, but firm. (Ideally it is important for the psychiatrist and staff-members to be total abstainers.)
3. Distributive analysis and psychotherapy.
4. Interpersonal relationship of patient and therapist.
5. Suggestive influences, including community and civic activities.
6. Continuous follow-up for life.
7. Full cooperation of the patient and his associates.
8. Interviews with family members.

Prevention

ON A BROADER basis, alcoholism now constitutes a major national health problem, all workers in public health and welfare agreeing that all too frequently alcoholism is one of the outstanding factors in the production of serious difficulties for individuals and the community. As one example many a juvenile delinquent comes from a home broken up by the effects of alcoholism.

The need for preventive education and understanding is great. Recently much more attention has been focussed on the problem of the alcoholic individual, and in many states and cities, committees have formed to handle or attempt to handle this problem. In our country we have more than a half-million known alcoholics, with an estimated two to three millions whose intemperance causes them and their families to suffer. Because the implications of alcoholism lie in the field of behavior, medical psychiatric supervision is needed properly to guide individuals and groups desirous of "doing something about it."

It is important to keep away as much as possible from emotional, political, or other attitudes that might obscure the clear facts that treatment of the alcoholic himself is primarily a medical rather than a moral problem; that wise preventive education should consist of recognizing that, in general, excessive dependent drinking is a frequent result of poor unsatisfactory emotional and other life-habits that appear to be associated with some of the contemporary social pressures of speed, noise, change and general insecurity in nearly all spheres of life; that the use of alcoholic beverages is traditional in most parts of the world and previous attempts at regulation have failed to get at the root of the problem because it is inherent with the individual himself, his personality, and his specific life-setting, with all its frustrations, frictions, etc.

We feel, therefore that information centers where problems of alcoholism could be referred, associated with treatment facilities to handle acute problems (a psychiatric hospital or unit) and adequately staffed with trained personnel (psychologists, nurses, social service workers) under the supervision of a psychiatrist, offer the most practical working program for the community and the individual. Affiliated services would include farms where selected patients could receive psychotherapy and common-sense re-education in life; and protective institutional arrangements for the more seriously psychiatric types, including the feeble-minded and psychopaths—the latter constituting, of course, the most difficult rehabilitation problem.

Conclusions

IN CONCLUSION, alcoholism medically is shown by the fact that the individual's drinking hurts himself or his family and that he cannot stop drinking. Alcoholism may be a part of any clinical reaction type, or produced by any clinical reaction type. Not all alcoholics can be helped; neither are all alcoholics hopeless. Careful examination and screening allow one roughly to decide which group the alcoholic belongs to, what type of treatment, including placement, offers the best chance at recovery. Individual therapy may uncover definite disturbing situations or frustations in the personality which contribute to the drinking and which may be modified in fact or by a change in attitude. Full cooperation from the family is essential and the patient must want help—or be guided to want help—with all his heart. No one whose psychobiological reaction to alcohol has been of a pathological nature can ever drink again without getting into a serious or serious difficulties with permanent brain damage as the final result.

The whole problem of alcoholism constitutes a serious involvment of the individual and society; and society must itself now assume responsible action, in curative facilities and in preventive educational measures.

Cost and Remedy of the Alcoholic Hangover in Industry

JOHN L. NORRIS, M.D.,
Medical Department, Eastman Kodak Company,
Rochester, New York

HERE is a typical statement being made today by employers all over the country:

"Bill—you're fired!! Your work during the last three years has been sloppy. Your attitude is hopeless. Your attendance at work has been completely undependable. Several times recently you've been drinking on the job and Tuesday noon of this week when you finally did show up you were so drunk the guard at the gate wouldn't let you in. We've been patient this long because you've been with us 13 years. As a young man you had real promise. You grew fast, were an accurate and fast worker and a high school graduate, were given charge of a growing department where you had the respect and liking of several college graduates working under your direction. But you've gone completely to pieces and we can't be patient any longer. During the last six months of last year you were absent from work eight weeks. To date this year you have been at work less than half the time. We can't run a business that way."

And Bill, knowing in his heart that this is true, only says—"That's the gratitude you get for giving them the best years of your life. Who does the boss think he is anyway. He gets plenty to drink at his club and he gets away with it."

So Bill starts the weary road to Skid Row—that dark road littered with broken promises, lost jobs, family quarrels, physical and mental agony. So industry loses one of its most important and expensive raw materials—the skill and training of a man or woman. At the time he goes, leaving brings a sense of relief—for Bill has been a problem for years. He took advantage of our liking and faith in him at first. His "nervous stomach" we had thought was the honest reaction of a conscientious man to responsibility at work and at home. The discovery that he got too high at company parties made us uneasy and the further discovery that his increasingly frequent absences followed excessive drinking gave us the feeling that he had violated a trust. We overlooked it at first—tried to understand—talked to him like a Dutch uncle—and the next morning at 2:00 A.M. we got a telephone call—from Bill—drunk again. So we're rid of a problem when he finally goes. But the cost to the company runs into many thousands of dollars for every case of this sort we have.

In one case in our organization, several thousand dollars has been paid in sick allowance alone during the last year to a 25 year member of our supervisory force who has been hospitalized now for nearly four months.

How many cases do we have? I don't know. Any estimate would be guesswork of the most general sort. National organizations have estimated that half of our adult population uses beverage alcohol, and that one person in 30 who uses beverage alcohol becomes an alcoholic. If we accept half of that estimate we would be admitting that in any group of 100 adult workers there would be roughly one alcoholic—10 per thousand—that at Kodak Park there should be about 190. I know personally of 17 members of Alcoholics Anonymous at Kodak Park. I know of several others who are likely but as yet unwilling candidates for that honor. The other 170 are a part of the unseen cost of production, unseen because everybody covers up for the alcoholic. His family hide it as long as they can. The fellows in the working group seldom tell the boss, on Monday or Tuesday, that Joe spent most of his check when he cashed it at Duffy's Tavern Friday night. Even I don't tell the doctor in another division of my own company that one of his charges drank a case of whiskey on his vacation, drank it alone, and was preparing to "end it all" with cyanide when he heard a radio broadcast in which a member of A.A. told his story of recovery.

A member of A.A. whom I have come to know well tells me that in his working unit of 140 men there were 25 who consistently lost Mondays from work, several of them part of Tuesday or Friday. I'll tell you the rest of the story later.

One of the A.A. men at K.P. lost 283 hours, more than seven weeks, from work during the last six months prior to joining A.A. He has lost almost no time during the two years since then.

Another lost 4½ weeks out of the last three months, and during the preceding year had been late 30 times, had lost two weeks without permission and six weeks during three periods of "sickness."

Another, an office clerk of slightly over 20 years of service, in 1946 was late 25 times, and lost 619 hours on account of "sickness."

So much for the cost. Accurate figures or even reasonable guesses are impossible to get. That the costs of the Eastman Kodak Company are considerable I know from individual cases about whom I have definite personal knowledge. Not long ago one of our vice-presidents said to me "But it isn't much of a problem with us, is it?" Unless top management has had some personal reason for being interested they have no conception of the toll this disease takes.

CAN anything be done about it in industry? Industry can't legitimately interfere with anyone's private life. If a man wants to drink off the job that's his business. We can't tell him

Presented at the first Industrial Conference on Alcoholism, sponsored by the Chicago Committee on Alcoholism, Chicago, Illinois, March 23, 1948.

how to spend his money or his spare time. Physicians in industry, and in private practice, can only advise, and our experience until the last two or three years has been that advice relating to one's drinking habits is universally ignored. As a physician in an industrial medical department I tried every way I could think of to help these people, and accomplished nothing. It was somewhat reassuring to my pride to be told that few psychiatrists, with all the time and skill at their disposal, averaged better than 3% recoveries, that private mental hospitals were filled with "repeaters." But that didn't help the poor fellows, many of whom I felt were sincere in their desire to stop drinking. Then one day one of my problems for whom I had worked out diets—given prescriptions for vitamin B—and warned that there was no point in wasting our time unless he would stop drinking—left a pamphlet about Alcoholics Anonymous on my desk. A group had started in Rochester and somehow he had been introduced into that group. Over the next few weeks he lost his stomach trouble and his jitters; and then he told me he had stopped drinking and had not had a drink for three months!

Not long after I was trying again to help a lad who was taxing the patience of his supervisor and the industrial relations department, and after spending hours explaining the nature of his physical and mental problems I gave him the pamphlet on A.A. that had been left on my desk. I can still see the quizzical half grin with which he thanked me for the consultation and the pamphlet—the grin which said, "What do you know about it? You've never been there." Two weeks later he was fired—another failure.

Months later my phone rang, and a voice said, "This is Bob C. at the plant. I am an A.A. I have been working with your patient, Bill, for the last few days. I don't think he is ready to accept the whole program yet, but he's dry now, and I think will be in on Monday." Bill had been one of our major headaches for years.

Bill came to work on Monday—very quiet—rather reserved in his comments about himself, his job, and his recent contacts with A.A. However, after a conference with his supervisor, he was given another—his last—chance. Three weeks later he slipped and was discharged from his department. Another failure! But he had made a contact in A.A. After a week in the hospital where was visited by A.A. members, he went to work in a canning factory. Each month for six months he reported to me and told me of his progress at home, on the job, and in A.A. At the end of that time, he was reinstated in his old job. Six months later he stopped at the office and said, "It's a year, doctor, since I've had a drink. I am really free." His home had been reestablished, his debts paid, the respect and confidence of his supervisor and fellow workers was again his. That was two years ago. "Free," he said. There were volumes in the way he spoke that word.

There began, for us at Kodak, a changing attitude towards the alcoholic, or, if you prefer, the problem drinker. Here was something that worked in two seemingly hopeless cases, If we had only known of this before Simon died—and Austin,—and Joe,—and there was Sally with her three children. The faces and situations of people whom we had tried to help with this problem in years gone by, and failed, raced across our minds. Something could be done for at least some of these people. But what, and how?

How can industry, and physicians in industry, fit into this picture effectively? Good doctors have always been aware of the complex nature of people,—that people sick in body are often sick in mind and spirit,—that people unhappy at work or at home have physical symptoms that may eventually lead to organic disease. Nowhere, in my judgment, is the need for treatment of the whole man more critical.

We must care for the physical needs of the individual. If he is just finishing a long binge, he may need hospital care so that he can eat and sleep without more alcohol. That is where, to date, most of our treatment has stopped, with the result that many patients have been discharged from the hospital with such an acute thirst that they are drunk again before they arrive home. This is literally true.

If the doctors in charge have more understanding of the nature of the disease, there has been a psychiatric study made of the individual, and he has left the hospital really dried out, with an understanding of the nature of his mental problems. This has been enough for only about 5% of those suffering from alcoholism. They have returned to normal life and remained normal. The rest have returned again, and again, and again—each time more discouraged; each time with another failure to forget, with more memories of promises broken, obligations neglected—and still they drink.

For nearly five years Knickerbocker Hospital in New York City has maintained a floor for the treatment of alcoholics. On this floor there are private rooms where the patient comes during the acute phase of his poisoning. Here the treatment is primarily physical. When the acute phase is over—usually in 36-48 hours—he is moved into a room with others where he is visited by members of Alcoholics Anonymous. There is a room in this area known as "Duffy's Tavern" where the patients gather during the latter part of their stay and swap stories with each other and with members of A. A.—where they find others who understand because they have travelled the same road. Let me quote an alcoholic at this point:

"Well, I've said that only an alcoholic understands an alcoholic. There's the secret. In days gone by, we would go to our doctor or spiritual adviser and not get any sympathy. Sympathy wouldn't have been good for us anyway. They would be apt to say: 'Why don't you think of

your children,' or 'why don't you use a little will-power?' Believe me, we do think of our loved ones—and as for the will-power, you might as well tell a man dying of tuberculosis to use will-power to stop his coughing. Alcoholism is made up of a combination of mental and physical differences that up to a point are accepted as normal, and after that point are looked down upon and avoided. The alcoholic needs help beyond and in addition to that which most doctors and spiritual advisers can give, and that help he can get in A. A. Why? Because there he will find people who will understand, who do not look upon him as an outcast but as a guy or gal who has the same problem that THEY OVERCAME — and those who have found their freedom from this enslaving disease are anxious to help. For in constantly keeping in touch with others who are fighting their way out, they are themselves kept constantly in the knowledge that once an alcoholic, always an alcoholic."

When the A. A. sponsor feels that the patient is ready for the road—usually in five to seven days—he leaves the hospital in care of the sponsor. In five years, 2800 people have been cared for in this ward. There are 2000 known recoveries. The remaining 800 have been lost track of. It is reasonable to assume that some of these have recovered.

I have mentioned Knickerbocker here in order to demonstrate the effectiveness of a program which includes the care of the whole man. Something can be done in and by industry if we use knowledge and techniques already available. How?

1. By doing everything that we can as individuals to understand the nature of the problem. Our own individual attitude toward the drunk must be one of understanding helpfulness. We must be honest, fair, and, once a promise is made, it must be kept. They must not be allowed special privilege, but they should have every "break" anyone else gets. There is only one admission to Knickerbocker for alcoholism—the ward cannot be used to dry up in preparation for the next binge, but there is one admission for the alcoholic who sincerely wants help. This understanding can come only through study, of literature available through the Chicago Committee on Alcoholism, the National Committee for Education on Alcoholism, through the Research Council on problems of Alcohol, the National Committee on Alcohol Hygiene, and any recognized civic group that is active on the subject.

2. By supporting with our thought, our time, and our money the community groups which, under the leadership of the National Committee for Education on Alcoholism are:

(a) Spreading the knowledge that alcoholism is a disease and that the alcoholic can be helped and is eminently worth helping.

(b) Providing Information Centers where alcoholics, their friends and families may go for advice and literature.

(c) Attempting to convince hospitals and hospital staffs that the Knickerbocker experiment or something like it should be established here and now.

All three of these local committee activities have a direct bearing on the problem of alcoholism in industry. If the family and friends of the alcoholic understand the problem and know where help can be found, he will be likely to get his problem out into the open and under control before irreparable damage has occurred. This means time and money saved for industry and the community.

In a large industry maintaining a full-time medical service, the plant physician may know several members of A. A. so that he will be able to bring the individual alcoholic and a congenial member of A. A. together. Few of us, however, have the time to spend at A. A. gatherings to know very many, and an Information Center is a real help here. It is one of the vital functions of the staff on an Information Center to know the membership of A. A. so that the right A. A. and the right A. A. group may be selected for the present patient. For smaller industries such a person or group is indispensable. Of course, a clinic staffed with an understanding doctor with psychiatric service readily available is a more complete answer for this phase of the problem, but few of these facilities are available. The usefulness to industry of hospital facilities for the care of the acute or chronic alcoholic needs no further comment here, I am sure. To have some place to send these people where you could be sure that they would get all the help there is available anywhere would be a real relief.

To us in Rochester, the National Committee, with its sources of effective literature, the stimulus of its leadership, and the assurance that when better ways are found, we will know about them, has been a source of inspiration and comfort without which the program would have bogged down long ago. The effectiveness of local committees in industry will depend on how completely we inform our supervisory and personnel groups, including medical staffs, about what can happen when there is understanding.

DOES it work? I have mentioned the two cases which served as my introduction to rehabilitation of an alcoholic. I would like to tell you of some of the extra dividends that the time and effort spent with an alcoholic bring. May I read to you some excerpts from a letter: "I am an alcoholic, a member of A. A. for the past four years. . .How wonderful it would be if all my fellow-workers could learn to see life as I am seeing it. About one-half of the fellows I work with seem to think their job is something pushed on them by the supervisor above them, and that the supervisors are the ones that reap all the benefits from their efforts. These workers seem to be unhappy at their work most of the time. About the only time they do their work correctly is when the supervisor is close at hand. It they

could only understand that they are gaining just as much as the fellow above them by doing their work willingly and correctly, the worker would be much happier at his work. Also, things would run smoother at all times. The working man would feel much better if he could only understand that his boss is in most cases a person who knows his business and not a person who was put there because he has a drag somewhere along the line.

"In my case when I obtained my peace of mind, I began to have a much better understanding of my fellow men. . . .Therefore, I suggest, let us try to establish peace of mind and good fellowship for all as near as possible." This from the lad I mentioned earlier to whom I had given the pamphlet about Alcoholics Anonymous, who was fired soon after.

Another letter: "I am Bill B. . . ., 46 years old, a worker at Hawk-Eye and, although an alcoholic, have not lost a days work since I took my last drink on November 12, 1945. This change from a drunk, losing time every week, in debt, and unhappy at home to a contented, sober, happy man, free of debt and at peace with the world in general, is directly due to my association with Alcoholics Anonymous.

"For the first 11 years I was with Kodak, prior to my acceptance of A. A. philosophy, I was constantly in trouble because of alcohol. And, I was not alone. About 25 of us would collect our pay checks on Friday, get plenty stinko over the long week-end and be unable even to show up for work until Tuesday. When we did get on the job, our work was haphazard simply because our hangovers were terrific. With every nerve taut to the breaking point, arguments, resentments, and misunderstandings were the order of the day. I argued with everybody. At long last, my boss could take no more. He told me I was a swell guy and a good worker when I was sober but since those periods of sobriety were down to about nil, he couldn't put up with any more nonsense from me. The next time I showed up drunk, I could consider myself fired."

The extra dividends: of this 25 only two are now consistently absent because of drinking on Monday morning, and I am told that the working atmosphere in that department has changed markedly for the better.

In October, Warden Walter Wallack, of Wallkill prison—a large prison in lower New York—told a Rochester audience that since a group of Alcoholics Anonymous had existed in his prison, the atmosphere of the prison had changed from suspicion and antagonism to friendliness and cooperation. I am told that the same thing has happened at San Quentin.

I have referred repeatedly to A. A., suggesting, it may seem to you, that it is the only answer for the problem drinker. Bill—who calls himself with true humility one of the originators of A. A.—compares the solution of alcoholism to a three-legged stool, the legs being medicine, religion and A. A. You can balance on any one, or two—but with difficulty. Use all three and you are secure.

Do not misunderstand—we do not know all the answers, and the answers that we have are extremely difficult to apply. The way to any alcoholic's heart is beset with many obstacles. Some of the ones you want most to reach, you will stand by helpless while they punish themselves and their families beyond repair. More knowledge is needed to reach more of those people early, so a part of our job is to support the research which is an integral part of the program of national organizations. For those of you who get into this public health movement I can promise hard work, misunderstanding, and discouragement. I can also promise the enduring satisfaction of having played a part in the recovery of people headed for certain destruction and death. I know of nothing more rewarding.

Clinical Observation on a New Synthetic Antihistamine

JAMES K. MARTINS, M.D.,
Assistant Plant Physician, Abbott Laboratories
North Chicago, Illinois

DURING the summer months, hay fever causes some lost time and considerable lost efficiency from the discomforting symptoms of rhinitis and conjunctivitis. Industrial physicians have hesitated to treat the disease because of the long time involved in specific desensitization. Antihistamines have altered this situation and make the palliative treatment of hay fever simple in most cases. With this in mind, it was felt that a study of a new antihistamine and its comparison with other products would be of interest.

Plant physicians in the drug industry are given an unusual opportunity in clinical observation on drugs before they are released to the general profession. Such an opportunity was presented in connection with the new antihistamine, Thenylene. Patients with allergic complaints were placed on the drug as they made their unselected appearance in the Abbott Laboratories dispensary. It was our good fortune to have the material released to us just prior to the onset of the hay fever season.

Thenylene is comparable in pharmacologic action to other antihistamines on the present market. It is a synthetic of ethylene-diamine derivation: N, N-Dimethyl-N'-(*alpha*-pyridyl)-N'-(*alpha*-thenyl)—ethylenediamine hydrochloride. The drug has the characteristic pharmacologic action of raising blood pressure in animals in which hypotension has been induced by histamine injection. However, it causes no rise in blood pressure in the normal animal. It will protect guinea pigs against histamine anaphylaxis to 60 times the LD_{100} of histamine. Spasm caused by histamine in isolated guinea pig ileum is prevented or abolished.

In all, 61 cases were treated; 43 with pure hay fever; one pure asthma; eight combined hay fever and asthma; four hives; one pruritus from atrophic rhinitis; one itching secondary to acute Rhus dermatitis; two dermatitis venenata.

Table I shows the results of therapy. Results in hay fever patients were considered excellent when the patient was subjectively comfortable and conjunctivitis and rhinitis were markedly reduced. Moderate relief was shown when some discomfort persisted despite therapy. Patients having no change in symptoms were considered failures. Results in pruritus were considered excellent when it was completely relieved and the patient comfortable. Results in hives were considered excellent when the patients immediately responded to therapy within 24 hours, experienced recurrence on withdrawal and were relieved on further therapy. Results in asthmatics were evaluated entirely on the subjective comfort of the patient.

Seventy-four per cent of the series showed excellent results. Thirteen per cent showed moderate relief and 13% showed no relief. Results in uncomplicated hay fever were higher: 80% showed excellent results; 13.4% moderate and only 7.6% failures. It is clearly demonstrated that this drug is less effective against asthma. This failure is common to most of the antihistamines.

TABLE I.

Diagnosis	No. of Cases	Results Excellent	Moderate	None
Hay Fever	44	36	6	2
Asthma	1			1
Hay Fever and Asthma	8	6	1	1
		1	2	5
Hives	4	4		
Pruritus, nose	1	1		
Rhus dermatitis	1	1		
Dermatitis venenata	2	2		

The average dosage taken was 50 mgm. q.i.d. for a period of three weeks to one month. The most common complication was the soporific effect of the drug. Fifty-seven per cent of the patients complained of sleepiness. Thirty-one per cent stated there was no soporific effect or that it wore off after the first day. Two-thirds of the patients feeling soporific effects were completely comfortable when they took 2.5 mgm. of Desoxyn (desoxynephedrine, Abbott) with each dose. This procedure was so effective in eliminating discomfort that it was adopted as routine to give 2.5 mgm. of Desoxyn with each 50 mgm. of Thenylene.

Table II lists other side effects and the number of patients experiencing them. The patient having the glossitis noticed fissuring and swelling of the tongue after taking the drug for two days. One patient developed a macular dermatitis which covered his trunk, arms and head. This drug reaction rapidly subsided after one day's withdrawal of the drug.

TABLE II.

Drugged feeling	2	Depression	1
Bad taste of the drug	2	Tremor	3
Glossitis	1	Dizziness	2
Dermatitis	1	Nausea	2
Ringing of the ears	1	Headache	2
Excitement	4		

Urinalysis and complete blood counts were done on 17 hay fever patients who took the drug on an average of 26 consecutive days (high 42 days and low 12 days). These tests were done on the day of the first frost. One urinalysis

showed a 1 plus glucose which had existed for four years previously; all others were normal. All white, red and differential counts were within normal limits. The average eosinophile count was 5.9 eosinophiles per 100 white cells. Two mild anemias were present but had existed previously, according to the patients. There was no evidence of liver enlargement or tenderness and no evidence of cardiac irregularities or blood pressure changes.

TABLE III.
LABORATORY RESULTS

Patient	Hb	RBC	WBC	Neut	Eos	Bas	Lym	Mon	Days	Urine
M.	14	5.19	8.6	53	1	—	38	8	21	Neg.
F.	11.5	4.03	5.28	66	2	5	21	6	21	"
M.	14.5	4.7	9.85	73	6	—	15	6	20	"
F.	13.5	4.42	7.7	56	4	—	30	10	20	"
F.	12.5	4.25	9.05	60	9	1	27	3	15	"
F.	15.5	5.49	12.6	63	7	2	20	8	20	"
F.	16	4.61	6.95	52	6	—	31	11	28	"
F.	15	4.88	5.2	52	7	1	35	5	33	"
F.	14	4.47	10.5	53	3	1	32	11	12	"
M.	16	4.02	7.65	57	3	—	34	6	21	"
M.	14	4.28	9.4	52	5	2	29	12	35	"
M.	15.5	4.68	7.55	48	13	—	29	10	42	"
F.	14.5	4.11	9.6	47	17	1	13	22	28	"
										Glu
F.	14	4.72	9.55	66	5	—	23	6	26	1+*
F.	16.5	4.65	10.4	61	3	—	26	10	28	Neg.
M.	15	4.03	12.7	58	7	1	27	7	30	"
M.	17	5.72	6.8	50	2	—	42	6	42	"

* 4 yrs. Duration.

Patients were carefully questioned concerning other forms of therapy, particularly as to their subjective comparisons with other antihistamines taken. Three stated that Benadryl was more effective than Thenylene; eight that it was less effective; five that the effect was the same. Two stated that Pyribenzamine was more effective; two that it was less effective; five that the effect was the same. Seven stated that Benadryl had more soporific effect and four that it had less than Thenylene. All patients stated that Pyribenzamine and Thenylene had approximately the same soporific effect. Five patients objected to side effects from Benadryl that ceased on taking Thenylene. Those patients that did not respond to Thenylene did not respond to either Pyribenzamine or Benadryl in test doses. Asthmatics stated that ephedrine and phenobarbital were much more effective in giving relief than any antihistamine.

As one would suspect, the drug industries have a large percentage of dermatitis. Allergic manifestations to the various pharmaceuticals take the form of an itching dermatitis. This is particularly true in the manufacture and handling of penicillin. A characteristic volar, macular rash is found. This dermatitis has been treated with the application of aluminum subacetate soaks locally and Thenylene taken internally. The results have been uniformly good. However, they have not been collected for this series. The itching usually subsides in 12-24 hours and the dermatitis in 48 hours. The subsiding of symptoms is much more rapid than with soaks alone.

In summary, Thenylene is an effective antihistamine comparing very favorably with other drugs on the market. Combining Desoxyn with the therapy decreases side effects and makes the patient more comfortable.

Members and Guests, 12th Annual Meeting, Industrial Hygiene Foundation at Mellon Institute

A Better Place to Work

—Abstracts of Proceedings of the 12th Annual Meeting of the Industrial Hygiene Foundation of America, Mellon Institute, Pittsburgh, November 19, 20 and 21, 1947—

Reported by

C. O. SAPPINGTON, M.D., DR. P.H.

IN ADDITION to an all-day session on November 20, 1947, the 12th annual meeting of the INDUSTRIAL HYGIENE FOUNDATION OF AMERICA featured concurrent round table conferences on medical, legal and engineering subjects on November 19, 1947; and on November 21 a similar conference on chemical and toxicological subjects. Attendance was limited to members of the Foundation.

The medical conference was composed of the following subjects, DR. A. J. LANZA presiding:

1. Summary of the Saranac Symposium.
2. An evaluation of Vision Testing Apparatuses, Procedures, Techniques, Methods.
3. Medical Problems of the Aging Employee.
4. Scope and Character of Work of the Industrial Medical Departement.

Discussion was given by DRS. SANDER, SHAVER, KUTSCHER, KUHN, McGEE, IRWIN, GONZALES, KRIEGER, VOSBURGH, SHIPMAN, BAETJER, SELBY, HAZLETT, MARCY, HUSSEY, SAPPINGTON, and CARLETON.

The legal conference, MR. T. C. WATERS, chairman, had the following agenda:

1. Legal Developments in Industrial Health.
2. Federal and State Health Legislation.
3. Sickness Insurance.
4. Air Pollution Regulations.

The engineering conference, PROF. PHILIP DRINKER presiding, followed this outline:

1. Report on Engineering Field Work by Foundation Staff.
2. Community Atmospheric Pollution—Review of Recent Municipal Actions.
3. Role of Roof Ventilators for Heat, Fumes, etc.
4. Supersonic Waves for Agglomeration of Dust and Fumes.
5. Exposure to Industrial Heat.
6. Plant Ventilation—Organizational Procedures in Engineering Departments.
7. Miscellaneous.

The conference on chemistry and toxicology on November 21, with DR. H. F. SMYTH, JR., presiding, had the following agenda:

1. Collection and Dissemination of Toxicological Information for an Industrial Organization.
2. Philosophy of the Maximum Allowable Concentration.
3. Dust and Vapor Effects on Skin and Absorption through Skin (to include discussion on chlorinated oils).
4. Beryllium Hazard.
5. Oil Fogs.
6. Radiation Hazards.

Program Sessions

THE program sessions on November 20, at which MR. ANDREW FLETCHER (chairman of the Foundation) presided, had for their theme "A Better Place to Work," with the following subjects and speakers:

FOUNDATION FACTS, 1947-48—ANDREW FLETCHER, President, St. Joseph Lead Company; Chairman, Industrial Hygiene Foundation; JOHN F. MCMAHON, Managing Director, Industrial Hygiene Foundation.

A BETTER PLACE TO WORK (Keynote address)—WILLIAM B. GIVEN, JR., President, American Brake Shoe Company; Foundation Trustee.

ATTITUDE OF COMMUNITIES TOWARD WORKING CONDITIONS—J. STEVENS STOCK, Senior Member, Opinion Research Corporation.

RESULTS OF FOUNDATION FIELD RESEARCH—T. F. HATCH, Research Director, Industrial Hygiene Foundation; President, American Industrial Hygiene Association.

INDUSTRIAL HEALTH PROGRAMS IN ACTION—H. A. VONACHEN, M.D., Medical Director, Caterpillar Tractor Company; President-Elect, AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS.

ADMINISTRATION, FUNCTIONS, AND COSTS OF INDUSTRY'S HEALTH FACILITIES—C. O. SAPPINGTON, M.D., DR. P.H., Industrial Health Consultant, and Editor, INDUSTRIAL MEDICINE.

ATOMIC DEVELOPMENTS AND INDUSTRIAL MANAGEMENT—SUMNER T. PIKE, Member, U.S. Atomic Energy Commission.

SICKNESS INSURANCE: ITS MEANING FOR MANAGEMENT—J. J. WITTMER, M.D., Assistant Vice-President, Consolidated Edison Company.

ESTABLISHMENT OF HEALTH AND WELFARE FUNDS UNDER THE TAFT-HARTLEY ACT—V. P. AHEARN, Executive Secretary, National Industrial Sand Association.

Morning Session, November 20

IN OPENING the meeting, Mr. Fletcher said in part, 'I can well remember the early years of our activities, and the skepticism with which industry, labor, and governmental departments viewed our proposed program of research directed toward the improvement of conditions for the American workman, and for the community in which he lives. The foresight and courage of the original organizers has certainly been amply repaid in dollars, as well as in human happiness. Today the Foundation is sound financially, our membership now includes most of the leading industrial companies, and our name and findings are known throughout the United States—in fact, in many far distant lands. There are no Industrial Hygiene Foundations elsewhere in the world. The foreign visitors, who come to us, have difficulty in understanding that the Foundation is a wholly voluntary research organization, supported by industries united for the well-being of workers.

'But we must not become complacent, as only a start has been made in the research that is necessary to solve the many hygienic problems that face, and will continue to face, labor, management, consumers and in general, our entire population.

'Just as continued research is necessary for our armed forces and our country as a whole, so too is research necessary to improve the health and welfare of the men and women in industry. Last year, in my opening talk, the question was asked, "Who is going to take the leadership in industrial health—the unions, government, or industry?' You probably know that in addition to the funds expended by Federal and state governments on industrial hygiene, the Anthracite Health and Welfare Fund announced in June a grant of $575,000 to the Jefferson Medical College for a five-year study of "Miners' Occupational Diseases." Last month the Ladies Garment Workers Union announced a one million dollar expansion of its Union Health Center in New York. If the accomplishment of the Industrial Hygiene Foundation in the past was based solely on the dollars expended, or if our present budget of around $100,000 per year was the sole indication of future results, then our contribution toward the improvement of working and living conditions would indeed be depressing. Although "dollars" are always helpful, the Foundation, through our competent staff, is even now able to stimulate industry toward taking the leadership in industrial hygiene that is so necessary. Your Board of Directors have not yet felt that the Foundation's financial resources, or the size of its staff, are sufficient to undertake fundamental research, especially as our membership covers such a large field, but we recognize our obligation toward fundamental research and at some appropriate time we will discharge our responsibility. We are in a position efficiently and satisfactorily to study particular industries, and to make constructive suggestions that will aid individual companies in that industry to improve conditions. For example, the Foundation has been studying air pollution in certain areas, and this problem may become even more important, as cities and communities throughout this country are tightening up on regulations governing air pollution. Pittsburgh, Niagara Falls, Cleveland and Los Angeles have already expressed deep concern, and Louisville has taken action against a large plant operating in that city to abate the public nuisance arising from dust, smoke and odors—11 damage suits have actually been filed by citizens of Louisville against the corporation. There is continued public demand for the control of air pollution, just as there is a demand for improved working and living conditions. I am sure that industry should not wait until the demands are translated into stringent regulations and subsequent legal actions. Industrial management must lead—not be led. Smoke cannot be banished by laws, neither can accidents or industrial diseases. The technical problems must first be solved.

'To combat inflation, and to aid a distressed world, what we need is greater production on the part of every worker in this country. I am hopeful that we are nearing the end of the cycle of industrial strife, and of the period of extreme positions on the part of either management or labor. I know of no better way for improving labor-management relations, and thereby improving production, than by developing together ways for improving working and living conditions. Industrial harmony and mutual respect must be earned—they cannot be bought or induced through propaganda, any more than an individual can buy respect or a good reputation. The maintenance of good working and living conditions speaks louder than all the pamphlets or posters ever published.'

MR. MCMAHON summarized the activities of the Foundation, and industrial health developments in general:

'At the first meeting of the Foundation's Board of Trustees, on Decemder 16, 1935, the organization

was launched with 25 member companies and associations. As of today, there are 349 members. Twenty-two companies and associations have affiliated thus far this year.

'Field work continued to increase in a satisfactory manner and involved approximately 70 different plants. This work was later described by MR. HATCH, the Foundation's Research Director. In an engineering survey for the pottery industry, the Foundation collaborated with the U. S. Potters Association to hold a Pottery Dust Control Clinic in Mellon Institute on October 13. Sixteen companies sent 31 representatives to this all-day session.

'Conferences are proving a practical measure for increasing Foundation services to member companies. A Medical Conference, an Engineering Conference, and a Conference for Attorneys and Compensation Officials have been held. There will also be a conference for research directors, chemists, industrial hygienists, and toxicologists. These closed sessions, limited to member companies in mining and manufacturing, draw together specialists with similar interests and problems from all types of heavy industry and so serve as valuable vehicles for the exchange of information and experience. But already, some of these sessions are beginning to exceed conference size. In the year ahead the Foundation hopes to sponsor several conferences for specific industries, possibly for engineers in the steel industry or for physicians associated with the asbestos industry.

' "Health in Industry," the Transactions of the last annual meeting, was issued early in the year. Just issued are two new bulletins, "Ventilation of Crane Cabs," a publication in the Engineering Series, and "Industrial Air Sampling and Analysis," a handbook for plant chemists and the first bulletin in the new Chemical and Toxicological Series.

'In mid-year the Legal Committee issued a short analysis of Occupational Disease Compensation Statutes and Developments in the 1947 sessions of the state legislatures, as well as a memorandum on sickness insurance. More recently the Foundation released a comprehensive digest of an important medical survey of the bituminous industry. Meanwhile, members of the Foundation staff published three papers in appropriate journals.

'The Foundation's staff is now composed of 10 persons, seven men, and three girls in the general office. An engineer was added to the staff this year and early in the coming year it is hoped to appoint a laboratory assistant who will also help with the technical files and the monthly *Industrial Hygiene Digest*. The staff now includes a Research Director, a Medical Director, a Head Engineer, together with other engineers and chemists. Member companies can regard these specialists as advisory members of their own staffs and can call upon them accordingly.

'The Foundation is glad to announce the establishment of an x-ray panel, under the auspices of the Foundation's Medical Committee, to which member companies may refer questionable chest x-rays.

'Top developments of the year in industrial health include:

1. Completion of the Medical Survey of the Bituminous Coal Industry, which high government officials are reported to have said could well be a "pattern for all industries."

2. The grant of $575,000 from the U.M.W. Anthracite Welfare Fund to Jefferson Medical College for research on "miners' occupational diseases."

3. Establishment of industrial health education centers at New York University and University of Cincinnati.

4. Completion of the Foundation's two-year study on Industrial Health Departments by DR. C. O. SAPPINGTON.

5. The Saranac Symposium on Beryllium.

6. The establishment of a Division of Medical Research by the U. S. Atomic Energy Commission.

7. The inauguration of sickness insurance in California and the introduction of some 30 bills on this subject in 13 other states at their 1947 sessions.

8. Expansion of industrial and research attention to problems of hygiology, resulting in many useful contributions to the literature. The Foundation endeavors to stimulate all such useful activity.'

MR. WM. B. GIVEN, JR., President, American Brake Shoe Company, and Foundation Trustee, gave the keynote address entitled "A Better Place to Work."

'Industrial hygiene has up to recently been years and years behind medicine. That distance has been greatly shortened. But we in industry are still lagging. The organization which is our host today and you assembled here are continually giving us in industry new tools to use in making our plants and offices healthier places. Our job is to put them to use with high zeal.

'I understand little of the technical. I am trying to find better ways for us in management to emphasize the human side.

'Knowing only one company, I must talk about Brake Shoe experiences. All companies have much in common. I would like to talk about our company's failures and successes in trying to progress in making each of our plants a better place to work. One fact must be admitted at the outset—our failures have been and still are due to management weaknesses, whereas our successes have come in the main from the medical department's successes in its fight for proper recognition of medical facts, the need for medical safeguards.

'Our company is one with many small plants—60 of them. Forty-two are foundries. The plants are scattered. In other words, the management problems are multiplied to an unusual degree. As an example, 42 foundry superintendents must be made dust conscious, and must sincerely believe that safer working conditions warrant higher costs, if higher costs are inescapable. Also, and even more important, they must be convinced that the bosses all up the line believe just that.

'Edmund Burke said "no cold relation is a zealous citizen." We recognize that no supervisor who is cold to the health of his men is a good boss. The looks of a plant, the types of its accidents, show up "cold" indifference.

'Like most companies, we have been carrying on a safety program for years. There was a safety department when I was hired. Looking back, I feel that its establishment had mostly to do with costs. If the monthly reserve for accident insurance could be reduced, costs would be reduced and the prospect for profits improved. The top management was interested in its people, but the drive on plant supervision was in terms of plant costs, not in terms of humanities. Plants were full of unnecessary hazards. The over-all record was bad. Only in recent years have we realized that any amount of expense which makes a plant safer is a very good investment.

Andrew Fletcher, President, St. Joseph Lead Company and Chairman, the Foundation's Board of Trustees, and Admiral Ben Moreell (Ret.) President and Chairman, Jones & Laughlin Steel Corporation, greeting the keynote speaker, William B. Given, Jr., President, American Brake Shoe Company

Chatting with Sumner T. Pike of the Atomic Energy Commission, center, are Dr. W. A. Hamor, Assistant Director of Mellon Institute, on the left and John F. McMahon, Managing Director of Industrial Hygiene Foundation at the right. Mr. Pike was one of the principal speakers at the meeting

Only in recent years have we realized that to progress in that there must be at the top a willingness to spend generously for safety, and in each plant genuine enthusiasm for safety on the part of all supervisors. Today we do not think a superintendent or foreman who has not that kind of enthusiasm is fully qualified for his job. Ability or know-how is no longer the only qualification for boss jobs; intelligent concern for the welfare of the workers is one of the additions to the requirements. Also, we have time and again found that the kind of person who heads the safety department is all important. He must be a fine person with a high sense of the company's responsibility to its people, and, even more, he must feel his personal responsibility to them. He must have top abilities of leadership. Also, he should be a part of the President's department.

'We need to remind ourselves what terrible places foundries used to be. During vacations while in college, 40 years ago, I worked two summers in a small machine shop which had, as one of its lean-to's, an iron foundry in which I also worked at times. It was probably worse than the average, but I am sure it was typical of many of the old-time foundries. The pay rates were about the lowest, and the working conditions the poorest in that vicinity. It was hard work. It was extremely hazardous work.

'For illumination, molders had a smoky kerosene torch. A hand shakeout method make it possible for them to breathe in the maximum of dust. The metal was all carried with hand ladles from the cupola to the molds over a floor as uneven as a pasture.

'There were no wash rooms. In the winter, a piece of hot metal was tossed into a bucket of water when it came time to wash up. The toilet facilities were the great outdoors.

'Heating a foundry in winter was unheard of. It was not unusual to build a fire on a heap of sand in the morning, especially after a few days' shutdown, before starting to mold.

'But today the foundry can be as healthy, as clean a place to work as any machine shop. It is slow in building, especially for foundries, but it can be done. Modern mechanization has even come close to eliminating the tired backs of yesterday.

'And the modern foundry is clean and healthy, thanks to managements having been awakened to the situation, and to the fine work being carried on by the Industrial Hygiene Foundation, which has formulated standards and suggested methods and practices by which these standards can be achieved. It has given us practical specifications for "a better place to work," and it will be our shame if our plants fall short.

'We need not only better working conditions but the best possible working conditions. Today, you and we have a new conception of what the foundry ought to be. First, irrespective of expense, we must eliminate the silicosis and lead poison hazards. Every part of every plant must be better lighted than even the expert says is necessary. Every possible safety hazard, irrespective of cost, must be eliminated. There must be cleanliness, good air and the best temperature possible to maintain.

'There must be as little lifting and carrying as possible. There must be a decent wash and locker room, with ventilation so that men can shower and change clothes in comfort, and not have to put on damp work clothes tomorrow. There must be a clean place to eat. As far as is humanly and mechanically possible, our job is to give each man conditions we should like, were we working in his place. This is not only a human obligation; it is the only way we can gather into our working forces decent, competent young men—the only way we can successfully compete for them with other industries.

'Fundamentals are such today that competition as to wage rates has been largely eliminated. But there is still a basis of keen competition—"A better place to work."

'If you "rate" the best people in the trades you need, gradually you will get them. As you do, costs will be affected and profits improved. Management has always known the importance of right people. In the old days you went out and looked for them. In recent years we have realized that to get them we must earn the reputation of being "a

better place to work." In the future, no plant will "rate" the best people without a successful medical department.

'If we are really sincere in this objective, management will be afraid not to give the hygiene department what it requests and needs for the successful operation of its program. For most of our foundries it has meant and will continue to mean, as medical knowledge advances, large capital expenditures. Recently I saw the cost of hygiene work last year in our comparatively small company. It seemed a lot.

'In the old days when a capital expense was recommended, Directors would ask "will this reduce costs?" or "Will it increase capacity?" Today the attitude is different. We know there are many capital expenditures we cannot afford not to make, although of themselves they neither reduce costs nor increase production.

'By and large, business problems are either arithmetical or human. Even if you are good with figures, the human side gives more of interest, more disappointments, but to many of us most satisfaction.

'We must build our human relations on the basis of the debt a company owes the people who make its success. This indebtedness is definite. It must and can be met.

'The first requirement is to give men the right kind of bosses—decent fellows whom the men under them know to be square shooters. Such a boss has to be a fine human being if men are to like and respect him. They must feel he will fight his own boss, if that is necessary, to better their lot. He must be willing to stick his neck out for his men where necessary. These qualities are even more important today in supervisory positions than technical know-how.

'Making a company "a better place to work" involves a respect for the ideas and suggestions of everyone to the point of being willing to try any suggestion that seems a fair gamble. Where possible employees should be consulted before making changes which directly affect them. A good example was afforded in our Denver plant where the industrial hygiene department designed a downdraft for a chipping bench. At the suggestion of our industrial hygienist, the man working on this bench was consulted for his recommendations as to the height of the bench and other details. He was pleased. This practice gives the man a very personal stake in the change and he is likely to strive that much harder toward its success.

'We have had just the opposite experience at many plants where for example, the men have not been told why it is important to keep upper windows closed, with the result that they go around opening these windows, thus short-circuiting the entire ventilating system.

'A management habit of treating every suggestion, every idea, with respect gives every man the feeling of being an important part of his department—gives him something to talk about that night at home.

'A large portion of my time is spent visiting plants. My average has been 50 such visits each year—to an average of 35 different plants. Backing the safety and hygiene departments is one of the prime objects. If the President himself runs into shortcomings, that does help. At each place there is time for a talk with our nurse in the presence of the superintendent. With him there, you get a chance to strengthen her hand—slip her an ace or two. You can tell her how important to the company are the human things she can do for company people. As our plants are small she gets many opportunities to help the families, and you discuss this, trying to increase the amount of such help. Before going there, you get tips on where she excels and where she falls down on her own "possibles." It is important to remind her that we have no better line of communication with comher frankly. Every opportunity she gets to help pany families than through her. They talk with her frankly. Every opportunity she gets to help in the home, makes a closer tie with our people. When you can help a wife or a child in that home, you are helping to build a better future in human relations.

'When company doctors or nurses help in a supervisor's family you speed cooperation many-fold. A foreman, back after a two-year battle with tuberculosis, said, "Except for DR. HAMLIN I would never have worked again." There is a man who will help build our safety and hygiene success.

'There is no better route to improving foremen's attitude toward their men than building interest in their health and safety and their line of communication is clearest when they talk with the man about his family and their health.

'If that is your objective, do not try doing hygiene work by edict. It can only be done by teaching. Before you can do a good job of teaching, you must know your students. The medical department must know the men in plant supervision or they'll get nowhere. That is rule number one if you doctors and hygienists are sincerely earnest in your work. The department's approach must be teaching—a minimum of telling. Remember, you teach a subject in which everyone is interested. That makes it easier. You know your subject, but in teaching, you will accomplish little unless your student understands the fundamentals and is successfully sold on their importance. Often, talking in terms of his family and his friends best crystallizes the importance of prompt action. Progress is being made when operating people are making suggestions to the medical department.

'What really matters is what happens to the man himself as he works in your plants. Planning safety and health is the simple part. Making it function effectively is another story. It is not only hard, but it is harder than hard. It is one of the great challenges to management. There are thrills for you in the progress that is made.

'We know medical research can solve the occupational health problems. We in management must effectively put to work their successes.

'The weak hygiene departments of today lack ability to be effective much more seriously than they lack knowledge of hygiene. In many cases, this is because the head does not understand the human elements involved, and in many more cases it is because he has not the effective backing of company officers. There is no greater waste of material than an able medical head in a company where the tops have the right "patter" and the wrong hearts. Actually, the executive who isn't deeply interested in eliminating all hazards does not qualify otherwise in this period when human relations are at last getting the recognition due them.

'Again I say it is important that medical men, their industrial engineers and all on their staffs realize that they face a selling problem. The best

sales people know that their first need is customer's confidence. You in the medical department need the confidence of plant supervision.

'In our company each plant management has clearly shown an attitude of apparent cooperation. Confidence in the medical department continues to grow, but in many places the end result has been and still is procrastination. Time and time again changes have been postponed—immediately necessary changes from a human standpoint. There isn't one of those men who is not a fine human being, deeply interested in his people. But it is sometimes difficult to break down habits of mind, especially with the older men who have worked a long time during periods having other yardsticks.

'Let me illustrate. Each fall our divisions submit in detail their capital expenditure budgets for the next year. They are classified as "necessary," "advisable," and "optional." For years all items which improve working conditions have, under company policy, rated the "necessary" classification. In spite of that, last fall I found many such expenditures rated as "advisable" or "optional." Again the tendency to postpone. They were all reclassified to "necessary" by me. I hope this will not occur again. Certainly some of our operating people will not forget last fall's experience.

'I should like to say a word about the kind of medical Director it takes to look after industrial health. He must be tops in medical integrity; more jealous of his standing and reputation as a medical man than his position in the company; unwilling to compromise his medical opinion to conform with ill-advised wishes of the company.

'He must insist on the adoption by the company of moral standards and ideals in its medical program, and see that these are lived up to—otherwise the employees' faith and confidence in the program will completely fail.

'Obvious examples of this are:

1. A completely frank and open sharing with the employees of physical conditions discovered in health surveys. In Brake Shoe, DR. HAMLIN tells silicotics that they have silicosis.

2. A rigid procedure of handling occupational claims solely on the medical factors irrespective of factors which might point to different handling.

3. A strict observance of the doctor-patient relationship. Medical files must be privileged.

4. Physical examinations must not be used for "weeding out." An employee should never be discharged as a result of findings of a physical checkup. However, if essential to his health, a change in type of work often is indicated. Further, a preemploymen examination should be considered as a "pre-placement" examination for the express purpose of placing a man at a job which he is physically able to handle.

'The medical head should be a passionate and tireless combatant in his strife for bettering working conditions. He must feel in his soul a responsibility to every man, every woman in the company, and to their families. He must have real qualities of leadership, and also be a damn good fight if the hygiene department is to succeed in its objectives. As between management and workers, he must visualize his responsibility to be that of the workers' representative at the management table. He should be the kind a President takes orders from, and gets a thrill out of backing against opposition—and incidentally, it is helpful if the whole organization knows just that.

'In one year I made three special trips on our company doctor's "orders"—twice to Chicago and once to St. Louis. Each time it happened to be impossible to leave New York during the week, so I left Friday and was back on Monday. On these three occasions, operating departments were either not fully cooperating, or were not in agreement with DR. HAMLIN'S proposals. It happens I do not especially prefer such weekend trips, and so in each case arrived r'aring-to-go. The medical department won hands down those three times, and each of our 10 divisional operating departments heard new proof that top management was behind the medical department.

'How effectively or how badly a medical department functions should be one of the many useful yardsticks for directors when they are wondering whether or not the company needs a new head. After all, the most important part directors have to play in management is promptly removing the senior officer when over-all he is found not up to his job—yes, and without wasting time about it.

'By the same token, with today's competition for the most intelligent and efficient workers, stockholders cannot long afford directors who do not realize the importance of top health and safety conditions in their company's plants, nor managements which do not spend whatever money is necessary to give plant people the maximum of health and safety assurance.

'Let me admit that the "possibles" I have outlined represent high standards—but surely they are not too high. You doctors who practice the profession of industrial hygiene, you who research in this important field, and the Industrial Hygiene Foundation, are blazing a trail to greater security and productivity throughout industry. It is our responsibility to follow you, to make every one of our plants "a better place to work."

'It was said of Edmund Burke that he "loved his country because of what he conceived it ought to be, as well as for what he held it to be in fact." For us in management there is a crying need to have you in industrial hygiene set your sights high as to what "ought to be" and in the present period keep high your hope, your courage as you see more what we are "in fact."

'I would like to add just a sentence: We are completely satisfied with our medical head LLOYD HAMLIN. Don't any of you try to steal him.'

J. STEVENS STOCK, Senior Member, Opinion Research Corporation, spoke on the "Attitude of Communities toward Working Conditions."

'Our experience in studying the citizenship of industrial plants in their communities shows that many plants have done remarkable jobs in "living right." That is, they have established safe, healthful, working conditions; they work hard at increasing the security of the worker in his job; they try to pay the highest salaries possible; they go in for all sorts of benefits for the worker. But when we go into the community and ask the employees, their families, and their neighbors about a particular plant - is it a good place to work? Does it pay high wages? Does it take any interest in the employee and his community?— we find that the public has little understanding or appreciation for the company's efforts. The reason is: Many companies have made no effort to interpret themselves and their good acts to their employees and also to their community.

Often when we ask employees why did such-and-such a company build a new factory, why did they put in a retirement plan, and similar questions, the employees tell us such things as, "the union made them do it," or "the government makes them do it." Often the management receives little or no credit for its effort to "live right."

'The point of this can be summed up in a mathematical formula. Good public relations is equal to X plus Y. The "X" in the formula means living and doing right things. The "Y" in the formula means giving this living right and doing right things a proper interpretation. Indeed, if you live right and don't attempt to interpret it to your employees, you may find a negative interpretation put on it. It is not uncommon for people to put unfavorable interpretations on companies' attempts at good living. High pay, for instance, may sometimes be interpreted as a recompense for poor working conditions or unstable employment. Thus, the simple act of raising workers' pay may be interpreted to the detriment of management—so is any other attempt by management to improve the lot of its employees. This is a very general problem in public psychology. You all may recall that the Arabs came to the conclusion that the Englishmen were dirty people. They said they must be dirty because they take a bath every day. So, in the formula, we must have the "X" of good living right, but we also must have the "Y" of our good interpretation of good living.

'Let me illustrate this by telling you how this works out in industrial community relations. In our recent studies of "How to Get Along in the Plant Community" we have documented the importance of the "Y" in this formula many times. For instance, we took the six plants in each of eight cities and asked the general public in each of the cities: Which of these plants is the best place to work? Which pays the highest wages? Which does most for the community? Which has the best working conditions? When we went back to the plants to see why some have the good reputations and some have the bad reputations, we found there was little connection between what plants do to live right and what people think of them. The reputations of these plants were most closely related to what the plants did to interpret their actions in good living to their own employees and to the general public.

'When we asked people how they got their opinions about these various plants, in the overwhelming majority of the cases, they replied, "I know somebody who works there," "I used to work there," or "I work there now." The point is—the best way for a plant to interpret itself to its community is for it to interpret itself to its employees first. Management has been disappointed on many occasions to find that with all its good works and right treatment of its employees, it receives no credit. And when the employees give their own companies little or no credit for its good effort at right living, it almost follows that the general public has the same opinion.

'My job here this morning, then, is not to tell you how to live right. The very fact that you are assembled here at the Industrial Hygiene Foundation is evidence that you are working hard at the "X" in my equation, meaning living right. My job is to point out to you that this "X" will mean very little to the general public in establishing your citizenship unless you also work to the "Y" factor. That is, you must interpret your efforts at living right to the general public. You must "put on your white gloves" and dramatize the good life.

'Recently we have been making some very careful analyses of worker morale in this country. What are the things that make workers like or dislike their job? Undoubtedly, the list is endless, but as we look at the broad, overall psychology of worker morale, we find it is the spiritual things that a man sees in his job that make his morale good or bad much more readily than the obvious negotiable items with which unions have preoccupied themselves. Obviously, when you ask a man what he likes most or least about his job, he will more likely answer "pay," but this doesn't mean that pay is most important to him. Here's why. We know that people with high morale are as often dissatisfied with their pay as people with low morale. Of course, pay is an obvious cliche—an obvious factor in worker morale but not nearly so critical as some other things.

'It is a most difficult thing for the average American working man to express himself in spiritual values, such as "the interest my company takes in me," "the interest I have in my work," "the feeling I have of being a member of a team in this company," but it is these same spiritual values that a man holds deep in his heart which are much more determining in his over-all morale. For instance, negotiable issues of working conditions, the handling of employee complaints and pay, fall way down the list in the ingredients of employee morale. It's such items as "interesting work," "interest the company takes in me," and "job security," which lead the list of job morale. Thus, in developing better working conditions and better way of handling complaints or increasing employees' pay, it is important that we not only interpret to employees that management has done these fine things, we must interpret them in spiritual values. We must point out that we did not improve working conditions because the government required us or the unions made us. We must point out that these things were done because the management of this company has a heart. It does these fine things because it takes an interest in its employees as human beings.

'In our opinion polls, we are continually hearing the general public say that management manages without a heart, it has ice water in its veins, that the profit motive is more powerful with management than any feeling for human relations. We must find ways of letting workers, the community, and the general public know that management is interested in human welfare—management does have a heart.

'You must live right, yes. And you must dramatize your good living just as a waiter does with his white gloves and his chromium-plated rubber-tired cart. Every policy you adopt and every step you take toward a better living must be accompanied by a favorable interpretation. If not, there are many in the public who are all too ready to supply an unfavorable interpretation. Whatever you do, you must remember that industrial hygiene must be interpreted as managing with a heart.'

MR. T. F. HATCH, Research Director of the Foundation and President of the American Industrial Hygiene Association, summarized the "Results of Foundation Field Research."

'Field research undertakings by the Foundation during the past year have exceeded the work of

Miss Elizabeth Kummer, Department of Chemical Physics Mellon Institute, explaining x-ray diffraction analysis of dust to J. E. Gray, S. G. Rummel, and Major R. H. Duguid

Examining apparatus used in making heat studies are Dr. L. E. Hamlin, Medical Director, American Brake Shoe Co., Chicago, and Dr. Dudley A. Irwin, Medical Director, Aluminum Company of America, Pittsburgh

previous years, in magnitude and scope as well as in the number of projects. Studies have covered a wide variety of representative industrial problems, ranging from investigation of underground operations to measurements of amounts and composition of wastes discharged from stacks. A few undertakings were routine in nature, requiring the use of highly standardized procedures for the correction of well-recognized hazards. For the most part, however, the studies have been more basic, even requiring entirely new procedures, and having to do with broader problems than the simple discovery and correction of a hazardous exposure. This is best indicated by the following list, whcih summarizes briefly the primary objectives of some major projects:

1. Coordination of dust control procedures (industry-wide).
2. Over-all appraisal of industrial health problem and advice on organization and operation of industrial hygiene service by company.
3. Preliminary investigations of new dust and fume problems to develop the needed research program for further study.
4. Basic engineering analysis of operations with Engineering Department to develop sound design procedures for ventilation and other control measures in place of empirical practices.
5. Over-all study of operations in a chemical plant to provide for the most effective layout and design of a new plant and equipment for maximum "built-in" control of hazardous materials.
6. Development of an operator training program, basic control measures, and a continuous sampling and alarm system for a toxic gas which characteristically escapes accidentally rather than as a daily occurrence.
7. Basic investigation of radiant heat in a hot industry, to determine the primary sources and pattern of exposure, with a view to the development of more effective control measures and further improvement of working conditions.
8. Further investigation of silicosis hazards and other dust exposures to provide more meaningful methods for distinguishing between hazardous and nuisance dusts and to give more meaning to occupational history as an essential aid in the diagnosis of chest x-ray films.

'Of special interest in our report last year was the number of projects undertaken on an industry-wide basis. Investigations of this type account for an even larger portion of the work this year. The procedure is entirely in keeping with the underlying function of the Foundation which is to promote industrial health through the joint effort of its members. Furthermore, the returns are greater when investigations are planned and undertaken on the broader base of a joint undertaking. An outstanding feature of an industry-wide study, is the advisory technical committee from the industry which is set up to take part in the planning of the investigation, selecting the plants for study, reviewing the data and collecting detailed information from the several plants in the group. There is greater utilization of the accumulated experience within industry with respect to a common problem. In a single investigation there is little opportunity to utilize this experience. What is more important, it is not possible to bring the varied experiences of different plants together for comparison and critical evaluation when plant studies are conducted separately.

'The significance of these joint undertakings extends far beyond the enhanced value of the studies themselves. The free exchange of experiences, chemical and engineering data, and even details of manufacturing processes which has taken place in each case is a tribute to the sound policy and the high objectivity of the companies involved.

'Mention has been made previously of the extensive studies conducted in potteries during the past three years. This year the Foundation was invited to visit all of the companies in the U. S. Potter's Association for the purpose of correlating the dust control work in that industry. Recently the Association conducted a Clinic on dust problems here at the Mellon Institute, the primary purpose of which was to discuss in considerable detail the dust control practices throughout the industry. Other industries may find this a worthwhile procedure and the Foundation will welcome the opportunity to assist in such meetings.

'Industrial hygiene is concerned with relationships between the health of the worker and the stresses of his job and of the industrial environment. The actual practices of industrial hygiene

are based upon the assumption, borne out by research and experience, that these relationships can be expressed in quantitative terms. That is to say, the effects of the industrial environment upon the workers' health can be determined from quantitative measurements of the levels of exposure to offending substances or other deleterious forces present in the environment. The factual and objective basis of industrial hygiene not only justifies its existence as a technical specialty, but of the greatest practical value, since, so far as possible, it aims to substitute facts for opinions. By means of quantitative analysis, major health problems are distinguished from minor ones. Important sources of trouble are identified so that, in the health program, money and effort can be expended for the greatest good.

'A formidable array of instruments and analytical techniques have been developed which are capable of measuring environmental factors with considerable precision. An equally extensive list of standards of permissible exposure have been proposed which make it possible, in the appraisal of working conditions, to determine whether or not health hazards exist. These developments are the result of many years of research in the laboratory and in industrial plants. The record of accomplishments in the practical solution of health problems in industry, through the use of quantitative methods speaks for itself and accounts for the increasing numbers of industrial hygiene services being set up within industry.

'Because of the excellent record of accomplishment, there is danger that industrial hygiene methods may become too standardized and acquire a degree of scientific sanctity not justified by the researches upon which they are based. This can be avoided only by constant, critical review of the procedures and standards and continuing research. Only in this way can the practical usefulness of industrial hygiene be extended and strengthened.

'Research is needed in the engineering aspects of industrial hygiene as well as in respect to analytical methods and in the formulation of quantitative relationships between the worker and his environment. . .Major dependence is placed upon ventilation and other engineering measures for the control of occupational diseases. Despite the great progress that has been made, the design of industrial ventilating systems remains largely empirical, with little consideration given to the fundamental engineering factors which determine ventilation requirements. Too often, satisfactory results are obtained only because of over-design. In other cases, systems fail to perform satisfactorily, not because of deliberate curtailment of capacity but simply through routine, empirical following of past experience without considering basic differences in operation which alter the design requirements. Systematic study of the forces which cause the dispersion of contaminants into the plant atmosphere must form the basis of sound engineering design of industrial ventilating systems. Theoretical analysis, supplemented by engineering research is required if this field of engineering design is to improve. Work in this direction has continued during the past year, but must be augmented by more extensive research facilities if any considerable progress is to be made.

'Community concern over industrial atmospheric pollution is increasing rapidly. In the near future industry will be called upon to curtail many wastes which now escape into the atmosphere. Research in the field of atmospheric pollution must be accelerated. Existing community standards, based largely on smoke, are not adaptable to the industrial waste problem. Sound relationships must be established between the community standards and the amounts of polluting material which industries may discharge into the atmosphere. Basic research in the methods of waste collection and air cleaning is required to supplement the practical experience upon which most of the available commercial equipment is based. To avoid confusion and conflicting claims when community regulations are adopted, industry will do well to take an early inventory of its atmospheric waste problems and to embark upon the needed researches.

'The technical work of the Foundation has a practical basis and there is no place in the program for research except as it serves this same practical end. On the other hand, continued dependence upon routine and standardized procedures results in little progress. The great variety of problems encountered in our field work constantly emphasizes the limitations of present methods of appraisal and of engineering design and consequent need for research to supplement the practical work in industry. A primary objective of the Foundation is to foster such research for the advancement of industrial hygiene. For industry it is a good investment especially as it should be oriented toward the discovery and development of better and more economical methods for the control of industrial health hazards.'

DR. MILTON H. KRONENBERG, in the absence of DR. H. A. VONACHEN, Medical Director, Caterpillar Tractor Company, and President-Elect of the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS, reported on "Industrial Health Program in Action."

'I feel that we are not fostering foolish fads nor indulging in vague humanitarianism. Today, the prospective employee sees industrial medicine not only as a profession that seeks to cure, but a profession that seeks to prevent. Its influence extends into the community from which an industry draws its people. We have every reason to believe that our medical program has materially influenced the health standards of our community. This is not looked upon by us as a philanthropy; above all, it is not paternalistic or done for its advertising effect or as a sop to the employees. Rather, it is an important function of management.

'The potentialities of an industrial health program cannot be interpreted in dollars and cents values because it frequently results in confusion. Who can calculate the value to our company in the reduction of lost time by curbing sickness or epidemics? Furthermore, it would be most difficult to appraise the assets to our company, or the economic savings accruing to our employees, resulting from adequate physical examinations. Most of the benefits, I feel, are bound to be unmeasurable. Others are very slowly yielding to some sort of evaluation. Such has been our experience.

'In order to set the stage for my part of this conference it becomes necessary to take you through our program and outline some of the services offered. In doing this, I am not attempting to argue a case or plead a cause, but merely point out certain features and important points and permit you to draw your own conclusions.

'The philosophy of this movement is fundamentally an attempt to increase the sum total of human

comfort and well-being, and I would remind you that well-being is the ultimate objective of all human endeavor, whether this be business, politics, religion, science, or what-not. In our industrial health program we are trying to prevent things which will destroy that state of comfort and well-being. We are trustees of human health. Our first responsibility is to the sick or injured employee. The fact that we are paid by industry does not release us from this obligation.

'Our program actually begins before the employee starts to work. The first step is to make sure that he is given a job at which he can work willingly and well. Through an interview by our Personnel Division his possibilities as a suitable applicant are appraised. Should he be qualified in certain skills it is not enough that we rely on hiring him for his ability as a swing grinder; we take into account that we are also hiring his eyes, lungs, heart, ears, behavior, attitude, likes and dislikes, fears, etc., before any final decision is made. Our routine is more than a physical and laboratory examination. It takes into consideration how the individual as a whole can undertake the affairs of life which will not interfere with his future career of usefulness.

1. *Psychological Testing for Selection and Placement*—consists of an intelligence test, a mechanical aptitude test, and two tests of emotional stability. Applicants are studied from the standpoint of capabilities and liabilities and are placed accordingly. A psychograph (personality) profile is prepared as part of the medcial record and the data used in assigning the individual to the job.

'We reviewed records of those employees tested previously to see if the results obtained could have predicted the employee's subsequent job performance as rated by the foreman. In 72% of the cases the tests agreed with the foremen's subsequent appraisal. In 28% there was disagreement. In other words, with these test scores obtained prior to job assignment we were able to predict with fair accuracy which employees were likely to do well and which were likely to do poorly in the future on a starting job.

'2. *Pre-placement Examinations*—are not a sort of screen by which only the best applicants-are selected. The objective is safe, productive employment for the individual and at the same time protects the existing working force. 15,400 applicants were examined during 1946.

'Our rejections previously varied from 5 to 8%. Today this has dropped to 3 to 5%, because of the interest and action taken relative to better and safer placement of the handicapped. New attitudes and improved personnel facilities have made it possible to give employment to more of these people. About 95% of the rejections are for noncorrectible eye defects, hypertensions, heart disease which indicates that exertion would cause undesirable end-results, active tuberculosis, diabetes, contagious diseases, spastics, advanced orthopedic defects, persistent dermatitis and varicosities.

'3. *Periodic and Request Examinations* average from 500 to 700 annually. They are in the interest of health conservation and are performed at intervals, the need being determined by the hazards of the work. By comparison with previous examinations they represent a great benefit and uncover conditions which the employee is not aware of. In the presence of certain defects a job reassignment may be recommended.

'4. *Transfer Examinations* are given under certain conditions to insure that a change of job in the course of employment will not result in misplacement which the preplacement examination sought to avoid. About 1200 such cases are cleared annually.

'5. *Return to Work Examinations* average 5000 yearly and are given employees absent for more than seven calendar days because of illness, or more than 14 calendar days for personal reasons. They are for protection of employees who often return too soon after sickness or injury, or who wish to resume work for which they may have become unfitted in their absence.

'6. *Key Examinations* are being performed annually an 143 executives. There are certain factors which constitute a particular danger to this group. Their hours, first of all, are undefined. Their work is not measured by time served but by goals achieved. The tension of the job becomes the tension of much of their entire day with its accompanying physical and mental manifestations. A recent survey covering a 5-year span shows gratifying results in blood pressure stability and weight maintenance. Repeated counseling and early symptom consultation has been popular and its intrinsic value conclusively demonstrated by their aging gracefully.

'7. *First Aid* offers services through a main station and six outlying stations strategically located, with a seventh station to be opened the first of the year. Ninety thousand cases of occupational origin were treated during 1946. Our insistence for immediate reporting and care as well as follow-up visits, coupled with modern methods of diagnosis and therapy, has prevented much suffering, hastened convalescence and returned employees to their jobs earlier. It has reduced the actual moneys paid out as final settlements for amputations, loss of use of members, and other related conditions by 25%.

'8. *Physiotherapy* is offered by trained accredited physiotherapist and is under the supervision of the staff physicians. Here we make use of varied physical agents in the treatment of injuries. The convalescent period is decidedly reduced and the employee is able to return to his job in good condition. Approximately 6000 treatments are annually furnished injured employees.

'9. *Medical Laboratory Services* by accredited technicians afford many diagnostic aids, and includes urinalyses, and blood serology for all applicants. Over a ten year period 95,000 Kahn tests have been performed revealing 1400 positives which have had the necessary verification tests. In the absence of contagion these individuals are employed if they agree to report regularly to their family physician or a clinic and furnish us with regular certifications of attendance. This case-finding project is on a highly confidential basis. In cooperation with all the local hospitals, a blood bank is maintained for employees and their immediate families. Blood typing is performed in our laboratory and a card index system of donors kept on file. Transportation to a hospital is furnished by the company in case of an emergency for blood. Our laboratory has, since 1936, been approved by the State Health Department. This laboratory makes weekly tests of all wells supplying drinking water for our plant. In addition, it conducts periodic analyses of milk and ice cream furnished our cafateria by a local dairy.

'10. *X-ray* makes use of a 500 milliampere x-ray with fluoroscope and a 4 x 10 photoroentgen unit. Routine chest films on all new applicants with per-

iodic retakes on others, assists in proper placement and where indicated helps employees avoid dusty environments and other areas considered hostile to the pulmonary tracer. It also assists in not only uncovering lung pathology such as tuberculosis but other lesions of the respiratory tract. Many seek retakes even in the face of an asymptomatic period. Here is where our health educational program has shown evidence of being successful. In 1944, cooperating with the official and local tuberculosis agencies, a chest x-ray survey was made at our plant in which 83% of the available employees participated. In 1947, this survey was repeated and 97% of the available employees participated. In the 1944 survey 22 active cases were uncovered and institutionalized. In the 1947 survey only six active cases were found. There has not been a proved case of silicosis on our books in the past 10 years, in spite of the three cases filed.

'11. *Eye Testing* by sight screener is required for all new applicants. This appraises their visual habits for near and distant vision. Those not meeting our standards are withheld from employment until proper prescription glasses are obtained, depending upon the job and age of the individual. A part-time optometrist working under the supervision of a consulting ophthalmologist supervises the program. This affords better and safer placement and many persons are grateful when informed of the defects uncovered of whcih they had no previous knowledge. Since job safety and good sight go hand in hand, we are now checking those employed who have not been previously screened. In two months, 1893 employees were checked, of which 453, or 25%, were found who needed attention; 109, or 24%, have asked for and received interviews; 122, or 27%, have obtained corrected glasses.

'12. *Industrial Hygiene Laboratory with Trained Personnel* insures adequate health protection through routine and periodic appraisal and evaluations of workroom environments for atmospheric contaminants and related exposures; also serving as a constant check upon the efficiency of the methods introduced to prevent the occurrence of occupational diseases. An advisory committee from several operating departments cooperates to provide for its successful operation with our hygienists. Special studies and regular inventories of unsatisfactory occupational risks have proved effective in safeguarding our working force. This has resulted in a reduction of several thousand dollars in payments for dermatitis cases over a two-year period.

'13. *Nutrition* very much to the front in physical fitness is eating the right foods. Daily menus prepared two weeks in advance are reviewed by the medical division. For the obese personnel in the supervisory group, a "Fat Man's Club" is in operation. Membership is not terminated until the optimum scheduled weight is attained. And how they strive to turn in their membership cards.

'14. *Licensing Vehicle Operators* since physical defects may have a direct bearing on accident occurrence. Crane operators, power trucksters, tractor drivers and others, after completing a series of tests given by the safety division, have those reports as well as their medical records checked for final approval before assigned to the particular job.

'15. *Rehabilitation* provides economic restoration to employees who have received occupational injuries. Some of our 6000 World War II veterans have also required medical evaluation and appraisal for selective placement. Other handicaps selectively placed have come to us direct from civilian life. Approximately 1800 handicapped are now employed with many varied physical impairments. One department alone has about 150 one-eyed persons. Once they are selectively placed and doing the job, ience with this group has been very encouraging.

'16. *New Investigations.* A recent project in action concerns the vaso-spastic or "dead finger" syndrome among foundry chippers using pneumatic tools. Since the manufacturers of these tools felt that no redesign of the pneumatic hammer was possible to prevent this vascular disorder we have thrown the resources of our medical division, research department, and foundry supervision together in an effort to conquer the problem. From what we have seen recently, it appears that we may have the answer to this occupational disorder.

'17. *Relations with Outside Agencies and Organizations* is often a necessary item in an industrial health program.

'Some may say that what we have outlined is "big plant stuff." Then one may as well argue that production efficiency itself is strictly a big-plant matter, which the small plant cannot afford.

'Since opinion polls are commonly used as basis of how people think and what they want, we may conclude by enumerating what our foremen, supervisors, industrial and labor relations personnel and others think about the industrial health program.

BENEFITS TO EMPLOYER:

Avoids entrance of potential human liability.
Assures healthy working force.
Promotes safety.
Improves employee-employer relations.
Protects against public criticism.
Affords better job placement.
Promotes community relations.
Improves our own trade position.

BENEFITS TO EMPLOYEE:

Affords proper job placement.
Increases period of gainful productive employment.
Insures family and dependents a more stable economic security.
Protects fellow employees.
Assists in up-grading employee safely.
Aids in adjustment of his work.
Provides him with information about his own physical condition.
Learns to rely on approved medical care.
Learns the importance of prompt medical care.
Assists in obtaining benefits due him.
Prevents development of disabling disease.'

Afternoon Session, November 20

THE SUMMARIES of the legal, medical and engineering conferences by MR. WATERS, DR. LANZA and PROF. DRINKER will be published in full text in the proceedings of the Foundation.

DR. C. O. SAPPINGTON, Industrial Health Concultant and Editor of INDUSTRIAL MEDICINE, gave the third of three consecutive annual progress reports on a two-year field study of industrial health services. The report was a final summary and interpretation referring especially to administration, functions, costs, and opinions on justification for services.

'The findings from this two-year field study, covering 278 plants in 33 states, help piece together the story of *what* industry is doing about the health of its employees and *how* this is being done. In this presentation it was possible only to mention

Dr. C. D. Selby, Medical Consultant, General Motors Corporation, Detroit, joins in the discussion of what he terms the "new day" in industrial health

Dr. C. O. Sappington, Industrial Health Consultant of Chicago, summarizing his two-year survey of Industry's Health Facilities

a few examples of findings. Progress reports were given at the last two annual meetings of the Foundation and published in the Transactions of the 1945 and 1946 meetings. The complete, final report is now in the process of publication. Reference should be made to these reports for details.

'Taking the person in charge of the health or medical service as an example of administrative policy, we find physicians in charge in half of the groups, nurses in 6%, and other persons in 43%. However, in the largest plant grouping (10,000 employees and over) physicians were in charge in 90% of the cases.

'Taking another example of the administrative relationships, in more than one-third of all establishments, reporting was done direct to top management by the health department; the three divisions of safety, industrial relations, and health were administratively on a par in approximately 40% of all plants; and the health department had the final word on health problems in approximately 43%.

'Comparing those functions which have been well established over some period of time with those which are newer, there was great variation in both types according to population groupings in the different sized plants; but those functions not so well established (that is, newer) showed greater variations in the size breakdowns. Pre-placement examinations showed the highest percentage in all groups (72%); return-to-work examination after illness or injury (65%); provision for dispensaries (61%); and periodic examination (60%). The largest plants of 10,000 employees and over showed high pluralities (above 90%) in all of these functions, while the smallest plants (under 500 employees) showed less marked but nevertheless definite pluralities in the doing of pre-placement, periodic and return-to-work examinations—less than half of the smaller plants provided dispensaries.

'Industrial hygiene services of some type were rendered in an average of 54% for the entire group of plants. This service ranged from inspections by safety engineers, nurses, physicians, and others, to technical studies and follow-up work. Technical studies were made in all groups by state departments of health, insurance companies, and parent-company laboratories, with the occasional use of private agencies and consultants. There were a few examples of in-plant service by a laboratory owned and maintained by the organization; these services are increasing rapidly.

'Safety and sanitation activities in the smaller groups were conducted mainly by state representatives, committees, commercial supply companies, nurses, foremen, physicians, and beginning with the 1500-1999 group there were organized programs of safety departments. It is noteworthy that among all groups there were frequent examples of the use of physicians and nurses in sanitation inspections.

'An average of 43% of all establishments gave some type of instruction in health and safety; this seems somewhat low and perhaps was very definitely affected by the activities of the war and reconversion periods. It is also seen that in the two highest groups, only half provided some form of health and safety instruction.

'A great deal has been spoken and written concerning the participation of physicians in job placement activities. We have divided the factors in this function into physical requirements, placement and transfer, and job analyses. There was a plurality of organizations in which physicians participated in job placement activities with reference to physical requirements, this showing one-half and with considerable variation in the different sized groups, ranging from one-third in the 500-999 group to three-fourths in the 1500-1999 group. It is noteworthy that in the largest group of 10,000 and over employees, there was a percentage of only 41.2 —this is understood when it is considered that in larger groups there is a great deal of lay assistance and participation in this factor.

'Approximately one-third of the organizations carried their own insurance with a spotty fluctuation of percentages being apparent in the different sized groups. Almost one-half of the largest groups carried self-insurance.

'With reference to cost of services, there are certain fundamentals and basic principles which can be set forth as follows:

1. The original investment for a small plant industrial health department usually will range from $500 to $3000, the upkeep from $300 to $700 a month; for medium sized plants the original investment from $5000 to $10,000, and maintenance from

$1000 to $3000 a month; for a large plant, the original investment from $10,000 to $125,000 and upkeep from $2000 to $8000 a month.

2. Small plants can do and have established very fine programs in industrial health without the cost being what is termed excessive.

3. Per capita cost of industrial health work will range usually from $10.00 to $12.00 annually, in most plants.

4. The cost of physicians on an hourly basis for part-time work will range from $3.00 to $20.00 an hour.

'Benefits may be divided or classified as *economic*, *professional*, and *social*.

ECONOMIC BENEFITS:

Prompt treatment—prevention of infection and other complications.

Early control of disability.

In-plant service more economical.

Decrease in spoilage.

Better control of medical, hospital and insurance expense.

Good care more economical than high compensation rates.

Healthy worker more productive.

'The manager of a chemical plant figures that a sick absence costs the company at the rate of a dollar an hour. On this basis, obviously any reduction in sick absences is bound to add up to a sizeable sum over a large group of workmen for the period of a year. Good working conditions reduce labor turnover. On the basis of the dollar an hour figure for absences, and $100 per case for turnovers, the company found that it saved $4.08 for every dollar it had spent for industrial health.

'The PROFESSIONAL BENEFITS may be listed briefly (among many of them) as follows:

Case-finding agency.

Uniformity in treatment.

Direct approach to health maintenance.

Check on placement, transfer, exposures, proneness, absenteeism.

Emphasis on prevention.

'Finally, the emphasis on prevention is one of the most important professional benefits of an industrial health service, for it has been wisely said that no industrial health service can expect to show a return for the investment until preventive measures are carefully instituted and followed This can never be done entirely on a curative basis.

'The SOCIAL BENEFITS (among many) may be listed as follows:

Promote contentment and stability.

Better industrial and public relations.

Aid to good induction.

"Take-home" health.

Preserves greatest asset—people.

Solution of petty problems.

Results not otherwise obtainable.

'Perhaps the greatest benefit that comes out of the industrial health service is that it preserves the greatest asset of an industrial organization—its people. Machines receive a great deal of care and a great deal of maintenance, but machines can be replaced. As we have said in former years, "the human body has no spare parts." '

MR. SUMNER T. PIKE, Member, U. S. Atomic Energy Commission, spoke on "Atomic Developments and Industrial Management."

'For convenience we are using tentative classification of companies in the order of the closeness of their present relationships to atomic energy work.

'In the first group we have those organizations which have direct contractual relations with the Commission. Such companies include General Electric, Carbide and Carbon Chemicals, Monsanto Chemical, The Kellex Corporation, Standard Oil Development Company of New Jersey, and two or three hundred others. The managements of these companies have already exerted themselves to find out what was going on in the fields of atomic energy, and of course, in the performance of their contracts are contributing to the mass of material facts which is accumulating. Naturally there must be such a close relationship between their management and the work they do for the Commission that there is little danger of their being long unaware of what is going on in the field. In the meantime these companies are accumulating industrial know-how which should be of great value when and as commercial applications show up.

'In the second group of companies, I would be inclined to put the ones involved in the same general lines of work as those in the first group but which are not actually under contract with the Commission, and also those which manufacture devices and equipment which have a direct outlet into the atomic energy field, such as Geiger counters, special pumps, and other items which need not be detailed. Usually the management in this group is acutely aware of what is going on in at least portions of the atomic energy field and is anxious to expand its knowledge and to keep direct contact with developments insofar as possible. Most of these companies know that we have considerable industrial groups at Oak Ridge and will have others at the Knolls Laboratory at Schenectady, where key men from their organization can learn what is going on and what is being thought about, so that they won't be left behind the procession when and if developments occur which will be of commercial interest to them.

'It seems to me that if I were in this group and did not have one or more technicians who were pretty well abreast of what was happening in my area of interest, I should be making attempts to get men placed so that they would be able to tell me what goes on and advise me what I should be doing about such developments.

'In the third group I should place those companies which face research and development problems which can be helped by the recently available radioactive isotopes. All through the fields of chemistry, biology and metallurgy, it seems apparent that the use of radioactive tracer elements may be able to give quicker and more accurate answers than previously known techniques. Outstanding at the moment is work being done on metal bearings and lubricants and in the field of oil refining.

'I believe that managements in this group, knowing their own research and development problems should exercise a keen and healthy curiosity as to which of these isotopes can help and in what ways. In some instances they can get help from already published reports and in others they can find out something from institutional research laboratories which are beginning to accumulate experience. In other, and probably in most cases, they will have to do their own exploration since the field is both vast and new. Work of this sort need not be limited to the big companies. The isotopes are available and there are a good many laboratories, both institutional and commercial, which will be glad to

take on jobs of this sort either for single companies or groups who have problems in common.

'These radioisotopes are usually made at Oak Ridge and are furnished either as the element itself or in one or two simple compounds. For instance, I believe that the isotope carbon 14 is available either as carbon dioxide or methane. It seems probable that companies which use them either for research or as control factors in their own business may very well want to put them into other chemical combinations. It seems to me very possible that the people who first learn the trick of making the radioactive combinations might well develop a profitable little business in their sale to other companies who either can't or don't want to go to the same trouble. This would apply particularly to such common elements as carbon, sulphur, phosphorous and iron.

'The people in this group quite obviously, and in the other groups to a lesser extent, must get some knowledge of dangers to health involved in the use of radioactive isotopes. They will naturally develop such measures as are necessary to protect the personnel involved in the use of these isotopes. Since I understand this subject is to be the subject of considerable technical and detailed discussion in special committees of this group, it doesn't seem necessary to do more than mention the subject here.

'In the fourth group, I am placing companies which will have uses for the things which are developed as the result of research in the atomic energy field. For instance, it is going to be necessary to do a great deal of work in high temperature and high pressure metallurgy before we can expect commercial power from the nuclear reactors.

'It seems to me that if I were in, let's say in the pump and valve business, I should want to be among the first to know and utilize the material results which will almost surely come from the necessary research activities of the Commission and its contracting firms.

'Another development which will be of great interest to industry is that of fluorocarbons and fluorine. Indeed these will have manifold applications in our industrial economy.

'Prior to the war, little was known and little use was made of fluorine products. Fluorine is perhaps the most corrosive known element and its most common use (in the form of hydrofluoric acid) had been in etching glass. However, for various technical reasons the gaseous diffusion process for the separation of isotopes of uranium at Oak Ridge employed a gaseous fluoride of uranium and it became very necessary to investigate, as completely as possible, the field of fluorine compounds. The compounds are now used in such diverse industrial processes as refrigeration, synthesis of hi-octane gasoline, insecticides, dyes, plastics, pharmaceuticals and lubricants.

'It may very well be that this group of expected by-products can be of great importance to large segments of industry. If my company were in this group I should want to have at least a sensible youngster from a good engineering or scientific school who could put together and evaluate for me such developments as might be of interest to my business. Such a man need not have this as a full time job and would almost surely be glad of the chance to keep in touch with what goes on in popular, scientific and trade papers. This is an investment that might pay really big dividends.

'Finally, there is that great group, probably the majority of companies, which sees no present possible connection between its business and atomic energy as we know it today. This is where being asleep might incur the greatest penalties and being vigilant might pay the biggest dividends. No one knows where the developments in this field are going to lead us. We do know that we are in the infant stage and that up to date a good many unexpected phenomena have shown up. We do know that in other big advances of human knowledge things which originally seemed troublesome by-products have turned out to be the bases of considerable enterprises. There is reason to believe that history will repeat itself here. The problem as to what companies in this group should do to keep abreast of developments is certainly difficult and probably incapable of any single solution. It almost surely isn't going to be enough to read the popular periodicals and probably the trade publications won't be sufficient. One has to realize that the periodicals themselves are badly handicapped in interpreting developments in this field since there just aren't enough people available who know what things really mean as they occur. That is probably the basic reason for so many scare headlines and stories which turn out to be misleading in spite of the best attempts of editors to tell the truth accurately. There are, however, distinct signs that news coverage is improving in both quality and quantity. McGraw-Hill has recently started the magazine called *Nucleonics* which from the early issues looks to be both scientific and authoritative. We on the Commission find that the press people who cover our work are rapidly getting a better understanding and a truer sense of proportion in handling the news items that come out of our shop.

'We may be facing such basic changes in the next generation of American industry that hardly any enterprise is warranted in blinding its eyes and stopping its ears to the things which will happen to us.

'One of the troubling developments which seems evident is that basic science or pure research for which we have formerly depended very highly on Europe, has been badly interrupted and may not be available as freely to this country as before the war. It is true not only that most of the basic science for the atomic energy project came from Europe, but also in other lines the Europeans have furnished the pure ideas which we in the United States have made the practical applications. Since applied research and development must follow the discoveries in pure science, it is obvious that in some way or another we must in this country supply the need which now exists and which in all probability will continue. It is highly unlikely that industry will or should attempt to do this work for itself in its own laboratories. The obvious place where this work should be done seems to be in and around the universities, but the universities in this country are typically up against a series of stringent financial problems and cannot finance the large expansion of basic science which is crying to be done. Government is supporting a good deal of this work, and in areas where prohibitively expensive scientific tools are needed, such as the atomic pile, will probably continue to do so. It would be, however, in my opinion, wholly deplorable if the future of basic science in this country should depend too heavily on government grants in aid. It is at least worth pondering whether industry should not be at least partially filling this gap.

'It is, of course, not my place to tell management what it should do in regard to such projects, but it is at least arguable that since basic science must go on in an expanded way and that the universities are unable to finance such work out of their own funds, it is highly preferable that industry should step into the breach with individual contributions rather than that Government in the absence of adequate private support should come to dominate this field.

'In conclusion, there is another matter which has a real interest to all industry. This is not a new subject. I suspect it has been mentioned to you before, and that is the matter of taxes and government expenditures. You are accustomed to working hard during the year. Your corporations are now paying the Government 38% of what they earn, and your officials are paying at least that percentage of their income. Our Commission is spending several hundred million dollars a year of your money. Are we or are we not spending it for the net benefit of the people of the United States? That includes you and me, the civilians and the armed forces. I can assure you of one thing, that we are attempting to better our operations and to get more for your money. Whether and how much we are succeeding is a matter for your judgment.

'When I remind myself that our Commission is spending as much as it took to run the whole United States Government when I was a boy in grammar school, I am a little shocked and maybe you are, too. Therefore, I ask you to look at our work carefully and critically; helpfully, if you can. It isn't enough to damn us as bureaucrats. Of course, I suppose we are bureaucrats. I worked for and have been acquaintd with a good many business organizations and I found about as big a percentage of bureaucrats in them as I see in Government.

'There is no use denying that power tends to corrupt. On the Commission we have a lot of power. We hope not to misuse it. If there ever was a job designed to keep five fallible men in a proper state of continual humility, this one is it. But in the long run, the judgment of the citizens of this country is conclusive and I hope you do your part in arriving at that judgment.'

DR. J. J. WITTMER, Assistant Vice-President, Consolidated Edison Company, discussed "Sickness Insurance—Its Meaning for Management."

'The solution of the problem of providing protection for the worker against loss of income due to illness lies in the enactment of some form of compulsory legislation. However, I do not feel that the state monopolistic programs adequately provides the solution from a management standpoint.

'I believe the answer to be in a law which would place legal compulsion on the employer to adopt some adequate plan which provides specific minimum cash sickness benefits to his employees, either through self insurance, through an insurance carrier, or through a separate state administered insurance carrier. This approach is by no means a new one. In fact, similar legislation was first proposed in New Jersey as a liberalization of the Rhode Island plan. The proposed program would follow the principles of the workmen's compensation law in that administrative control would be delegated to the state. In all cases the required protection is afforded through an insurance carrier, self insurance, or the separate state administered insurance carrier and further, the state will act merely in a regulatory and law enforcing capacity over all three forms of coverage.

'Specifically, what I have in mind is as follows:

1. A law which will require that employees who are absent due to illness shall receive weekly cash sickness benefits which shall be at least equal to say 50% of basic weekly wages, not to exceed $21.00 per week (on a New York State basis). It would seem appropriate to set the rates for illness at a level about on a par with Unemployment Insurance rates.

'2. To avoid the terrific burden of payment of claims for illness of short (one, two and three days) duration, it is desirable that the law provide for about a one-week waiting period before benefit payments begin. Employees can reasonably be expected to carry on for one week without help.

'3. In order that employers who are considered poor risks and therefore uninsurable by insurance carriers, may comply with the requirements placed on them by the state, the law should provide for the establishment of a separate state administered insurance carrier.

'4. The law should provide for an election by the employer as to the medium through which he shall provide the required sickness protection. He should be free to make his choice as between self-insurance, insurance with a recognized carrier, or in the state administered carrier. Regardless of how he may decide, the cost of the program should be paid jointly by the employer and employee. I say joint contribution advisedly because of the undesirable features of a system to which only the employees contribute. Joint contributions are undoubtedly more conducive to sound administration and amicable employer-employee relations. The premium to be imposed and at least shared by the employer and employee should be established at perhaps somewhere between one and one and one-half percent of the employees' weekly earnings. This would appear adequate from the experience in Rhode Island and California.

'5. Under either an insured or self-insured program, the law should provide that sickness benefits shall at least equal but not be limited to the specified state benefit. In other words, an employer if he so desires may provide a salary continuation plan, or one which provides a more liberal percent of salary benefit than the State Fund provides.

'6. The law should prohibit the pyramiding of benefits. For example, it should provide that no disability benefits shall be paid while the individual is receiving unemployment benefits or workmen's compensation for the same period under the laws of any state in the United States.

'7. The law should provide for the establishment of a permanent State Commission to enforce compliance with the law by employers with voluntary insured or self-insured plans. It would seem to me that this Commission should consist of an equal number of unimpeachable, high-calibre representatives from the legal and medical professions, perhaps with an impartial chairman appointed by the state governor, and should have the power to appoint such sub-commisssons as are required for local administration.

'8. As to the payment of claims for benefits, the law should require that medical certifications of duly accredited and "approved" physicians be submitted. I cannot stress this point too strongly. Failure to provide for some control of the integrity of certifications can be the undoing and financial

ruin of any sickness insurance program which can be devised.

'Briefly, these are the highlights of what to me seems to be a workable and efficient program of compulsory sickness insurance. It would exclude the undesirable and unsound features of existing legislation in other states and at the same time provide for reasonable control of sick absenteeism. I think that such a program could be adapted to suit the needs of any state contemplating such legislation. Rhode Island, as the pioneer, made mistakes, and California profited by its experience. I feel that the program outlined would be an improvement on both.

'In conclusion, let me repeat that compulsory sickness legislation has tremendous popular appeal and the sooner we, as executives, realize this, the sooner we can plan a campaign which will result in legislation as well as employee appeal.'

MR. VINCENT P. AHEARN, Executive Secretary, National Industrial Sand Association, and Foundation Trustee, concluded the session by presenting the subject "Establishment of Health and Welfare Funds under the Taft-Hartley Act."

'Perhaps we had better start by stating just what this Act does provide. It says, in effect, that health and welfare funds are regarded as a part of sound public policy. That I think is the basic note struck in the Labor-Management Act with respect to health and welfare funds must be established if they are to meet the standards of sound policy.

'They must be, for instance, for the sole and exclusive benefit of the employees, or for the members of the families of such employees. The Act also provides that employers may associate themselves for the purpose of entering into health and welfare funds which provide for pooled benefits of this type to the employees of all the employers.

'It allows for the extension of these finds, not only to members of the families of the employees, but to the dependents, and it goes on to indicate the ways in which this money should be spent, from medical to hospital care, for pensions on retirement, upon death of employees, compensation for injury, sickness; the whole gamut of health and welfare.

'Now you know the law also provides that the funds must be jointly administered by employers and representatives of the employees, and they must also provide for an impartial member, a public representative, whom they shall designate themselves. And if they can't get together on who that third and impartial administrator shall be, they are required by law to ask the Federal Judge of that District to name that third representative.

'There must be an annual audit of the trust fund also, and a statement of the rules of the administration of the fund must be available to all interested people. Furthermore, it is provided that where there is a fund for pensions or annuities, that that fund must be set aside from the rest of the funds and separately administered. In other words, the Congress of the United States said that if men are led to except that upon retirement they shall have a pension or annuity, nothing shall be allowed to interfere with their getting it when they do retire.

'I said earlier, that it seems to me that Congress, at least by implication, has said, "We regard it as sound public policy to encourage the development of health and welfare funds." I would like to indicate wholehearted agreement with the previous speaker when he said that there is popular appeal for sickness funds. I don't care what you call them, but you know what I mean. A man is sick, he can't work and his income stops. It is a catastrophe for him and for his family.

'Perhaps the expense of these funds at the beginning will be such that the ideal type of fund is utterly unattainable. But I should like to say to representatives of employers that we must be alert to the fact that health and welfare funds do have strong public appeal and the Congress has, by spelling out the standards of these funds, said very strongly, "We commend them to your attention."

'A lot of people have said the Taft-Hartley Act is, after all, just a product of the National Association of Manufacturers. I don't think that is so. I think this Act is a product of the Congress. I think it is designed to protect the welfare of individuals and also to assert the superiority of the public interest in labor disputes. I don't know why employers should jump up in the air and click their heels about this law. As a matter of fact, right in this particular section there are things which if done on June 22, 1947 would have been perfectly all right, but if employers do them today they can be sent to jail for one year and fined $10,000. It is a sober note to strike with respect to discussion of this law.

'So much for that part of the law dealing with funds. Let me say something about the effect of these funds and the extent to which they are presently in operation. It is estimated by the Bureau of Labor Statistics that there are about 1,250,000 workers covered by existing health and welfare funds of all descriptions. Obviously a great many more are presently dealing with employers through their representatives or dealing directly with their employers where there are no unions, for the purpose of organizing health and welfare funds where they do not now exist.

'Employers are always realistic, it seems to me, and being realistic people, you must see that a great deal of the discussion at the recent labor meetings concerned health and welfare funds, of all kinds. The AFL and CIO said the development of these funds and their execution with employers would be a major policy from now on.

'In England last year I talked with the Labor Attache of the American Embassy in London; he told me that in England the average worker, between the ages of 20 and 55, was far worse off than his American contemporary—he didn't make as much money by any means; but that between the ages of 55 and 75 he was better off than his American contemporary, because while he was working between 25 and 55 he was developing equities which benefitted him as he approached retirement and as he retired.

'I was interested in something that DR. SELBY said from this platform this afternoon about the prolongation of the life of employees. That certainly is going to be a real problem in American industry, it seems to me, and it is going to intensify interest in retirement funds.

'I think we should not attach too much importance to the rejection by the Ford employees of that pension plan. It seems to me that they simply said, a bird in the hand is worth two in the bush, but they didn't vote down pensions, in my judgment. They simply said, "We want a wage increase first."

'Employers faced with this problem in collective bargaining don't know at the moment just what to

do about it. There is an important case pending before the National Labor Relations Board, the outcome of which will have a great deal to do with your decision. There are two companies which have taken the position that health and welfare funds, again used in that generic sense, are not the proper subjects of collective bargaining and that therefore, employers may, by unilateral action, establish these funds and administer them. A union has taken the position that not only is that subject one covered by collective bargaining obligations and techniques, but that an employer may not legally establish such a fund without consultation with and acquiescence by the union. That is a very important part of the law. Is it required as a subject of collective bargaining, because, in my opinion, this is peculiarly the kind of thing on which it is unwise to make firm contract commitments.

'Where sick leave plans have operated up to now, it is generally accepted that they haven't worked out very well; they have been abused a great deal. While perhaps it is desirable to cover these things by law and not by contract, I would much prefer to see them covered by voluntary practices in American industry, rather than covered by statute, much less by contract. Because if these things are covered by law, industry is going to find itself in the position where it can hire only perfect specimens.

'I said earlier that this law (Taft-Hartley Act) is designed to protect individuals. I find it impossible to believe that the average worker is fooled by claims of "slave labor" legislation. I have great respect for his intellectual capacity and his ability to think things out for himself. He must see that it was outraged public opinion that led to the passage of this legislation; he must be realistic enough to understand that the basic principles of this new law are permanent legislation and that union plans for ignoring it and for boycotting the National Labor Relations Board, if followed by strikes and violence on the picket lines, will lead to more and not less restrictive legislation.

'It seems to me that the two great labor organizations are still thinking and talking in terms of power politics. Their officers make hysterical speeches to packed audiences, and they make demands on the workers to develop funds which they say are going to be used to get this statute off our legislation books.

'In recent labor meetings not one voice was raised about the need for development of better relations with the public; nobody reminded the labor convention that labor unions, like any other American institution, will be permitted to thrive and develop just so long as they show the capacity to use wisely the power which the public has conferred upon them by law and by custom.

'Union leaders would like to have their members believe that it was the organizations of businessmen which persuaded Congress to put this law through. That is not so, and they know it. As I see it, three groups must get the credit or the blame, for this new law. First is the National Labor Relations Board, which took the position that the individual worker and the individual employer had no rights whatever, that unions were desirable ends, and that any means used to accomplish those ends were justified. A considerable part of the new Taft-Hartley Law represents nothing more than a recapture by the Congress of its law-making functions.

'Next in order of importance, if you wish to cast blame for the passage of this law, are the CIO and the AFL with incidental help from several of the railroad brotherhoods.

'Now the Taft-Hartley Law may be changed, it may be amended; in fact a committee was set up to investigate the need for change. I know the role of a prophet is a rugged one, but let me make some predictions. If there are changes, I think those changes will take the form of further protection of the rights of individual workers. As I see it, this law does three things: (1) it says that not only employers and unions are parties to labor disputes, but the public is a party to labor disputes, and that the public has a superior interest in the dispute. This is said in the preamble to the Act in language anyone can understand. (2) It is concerned with the rights of the individual. A man may not lose his employment because of the caprice of a union official. (3) It supports the national determination to make collective bargaining work.

'Employers must keep their minds focused on those three points, because this law does not by any means go as far as many members of Congress would have liked to see it go. I don't happen to know Senator Taft personally, but I would like to say that had it not been for the senior Senator from Ohio and the moderating role which he played while this law was going through the Congress, this law would have been far more restrictive and far more drastic than it really is. A great many members of Congress favored compulsory arbitration, and if there is violence on the picket lines and bad strikes, who knows but what the next session of Congress will order it?

'It is time to take inventory. What can we do as individuals and as groups to improve relations between employers and employee? Certainly health and welfare funds offer a great deal of hope in that regard and I don't think they can be dismissed by a simple statement that they are prohibitively expensive. How can we convince the public that a forced settlement of labor disputes will aggravate and not cure. It is time for all of us to stop talking about responsibilities, because the public is weary of violence and argument on the domestic scene.

'We know that compulsory arbitration has never worked in any country in which it has been tried. We all have a common interest in stemming the tide of socialism, which is laying its stagnating hand upon industry and commerce in other parts of the world, but we must see that a desperate public will turn to any system which holds out a hope of reducing the turmoil which attended the handling of labor disputes immediately following the ending of World War II.

'Perhaps the solution to which the public will turn will be no cure at all. I would like to recall to your attention that the House of Representatives overwhelmingly endorsed a proposal by the President for settlement of a railroad strike, notwithstanding the fact that the terms of that settlement would have ended the exercise of privileges which we thought were rooted in the American tradition. I should like to remind this audience that conservative members of the United States Senate and representative organizations of American industry joined in their opposition to this fantastic proposal and it was brought to an inglorious end. Yet there can be little doubt that the public supported the President at that time, not because he had devised a workable and equitable solution, but because he had a program. That is something for us all to keep in mind.'

ASSOCIATION NEWS

OUR error in the item about DR. RAYMOND S. VAN HORN in the February issue, page 75. He is the Assistant Medical Director; DR. M. R. SUTTON is the Medical Director of the Buick Motor Car Division of General Motors.

DR. C. E. SPIVEY, of Crossett, Arkansas, has retired from active practice. He has been a member of this Association since 1939, and has been Medical Director of Crossett Lumber Company and its affiliated companies.

AT THE March 3, 1948 Annual Meeting of the MICHIGAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS, the following officers and directors were elected: E. A. IRVIN, M.D., President; K. E. MARKUSON, M.D., President-Elect; J. L. ZEMENS, M.D., Secretary and Treasurer; Additional Board of Director Member: J. D. MILLER, M.D., Retiring President.

THE NEW JERSEY ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS sends in the following interesting item about its recent meeting: The scientific program of the meeting consisted of an excellent discussion on Beryllium Poisoning by DR. HENRY BRODKIN, Medical Director of the Compensation Division of the New Jersey Department of Labor. DR. BRODKIN discussed the etiology, symptomology, diagnosis, differential diagnosis and prevention. His paper was very well illustrated by excellent slides and chest films of actual cases. The next meeting will be held in May at one of the plants in New Jersey.

The Committee on Certification

REPORT from the COMMITTEE ON CERTIFICATION — Presented at the Board of Directors' Meeting, March 30, 1948, at Boston:

There were two outstanding developments in 1947 which have important bearing on Certification in Occupational Medicine. The first was the approval by the A.M.A. Council on Medical Education and Hospitals of the plan for graduate training in this specialty presented by the joint committee of the A.M.A. and the A.A.I.P.&S., and the approval of such plan by the House of Delegates of the A.M.A. The second was the preparation and distribution by the Council on Medical Education and Hospitals of the A.M.A. of their questionnaires covering fellowships and residencies in Occupational Medicine, these questionnaires being sent to hospitals and medical schools throughout the country. Also, Occupational Medicine is formally listed in the most recent bulletin relative to "Essentials of Approved Residencies and Fellowships" published by the A.M.A.

These developments place residencies in this specialty on a formal basis comparable to other residencies in line with the plan adopted by all Certification Boards, and pave the way for a more rapid development and utilization of such residencies and fellowships. During recent years, fear was expressed in some quarters that there would be difficulty in placing doctors who accepted fellowships in Occupational Medicine. This fear has been dissipated by the fact that doctors completing such residencies have secured excellent appointments in industry, and there is every indication that the potential demand for such specially trained physicians exceeds the supply. Actually, the chief difficulty consists of obtaining suitable applicants for fellowships and, of course, in establishing the fellowships themselves.

If and when a sufficient number of hospitals establish graduate training facilities in Occupational Medicine in connection with approved industrial plant Medical Departments and a sufficient number of doctors apply for and receive such fellowships, the major obstacle to Certification will have been surmounted.

—FREDERICK W. SLOBE, M.D., *Chairman*,
EARL F. LUTZ, M.D.,
C. O. SAPPINGTON, M.D., DR. P.H.

LETTERS

The Human Element in Accident Prevention

TO THE EDITOR: I see in your January issue "there is a grave concern among those who have an over-all picture of industrial safety as to the future of the now time-tried methods of attaining it." Not knowing just who it is that has an over-all picture of industrial safety, nor just what they have in mind as to time-tried methods, I'm not in a position to comment on their grave concern.

Speaking of my own experience, I have no concern about what can be accomplished in industrial accident prevention. I know from my own observations and work in organizations ranging in size from about 100 employees up to as many as 40,000 that average frequency and severity rates can be reduced from 50% to 80%. Having entered my seventeenth year of full-time accident prevention work, three years as safety engineer with a workmen's compensation insurance carrier, and the rest of my time as a consultant, working with construction companies, chemical plants, structural steel fabricating plants, sugar refineries, shipyards, and others, there would appear to be something of a factual basis for my conclusions.

Certainly the human element is important in accident prevention. Unless there is a friendly and understanding relationship between the safety engineer and the men with whom he works, most of his efforts will be wasted. Unless the safety engineer understands the nature of work being performed and the limitations of workers to perform it, and helps to correlate the ability of the worker with his work, results will not be all that they can be.

I am much more concerned about accident-prone attitudes on the part of foremen and workers than I am about accident prone workers.

Unquestionably accident prevention needs more and better highly qualified safety engineers, but our top-ranking safety engineers can and do get results that need no apologies. I'm reasonably certain that there are plenty of physicians, even industrial physicians, who can learn much about accident prevention from some safety engineers.

—EDGAR N. GOLDSTINE, Consulting Safety Engineer; Member Veterans of Safety; A.S.S.E.; Am. Ind. Hyg. Association.

COMMENT and OPINION

New Laboratory

BETHLEHEM Steel Corporation has opened a new industrial hygiene laboratory at Bethlehem, Pennsylvania, to further the company's program for eliminating industrial hazards and provide improved working conditions.

—*New York Herald Tribune*, February 22, 1948.

"Panorama"

ANOTHER International Labour Office executive moved into the Federal Security Agency recently when Donald Kingsley was named Assistant Federal Security Administrator .... London and Southern England specialists voted 766 to 11 to boycott the new British health scheme until it is modified. The plan is scheduled to go into effect July 5.

—From "Panorama," in *Medical Economics*, March, 1948.

Color Conditioning

A BULLETIN from the National Association of Manufacturers carries this advice for the relief of eyestrain and the reduction of industrial accidents: "Good color conditioning might serve as an effective check against many industrial accidents. If seeing conditions are poor, the worker is exposed to hazards such as these: insufficient visibility automatically increases the dangers of his task; in his effort to carry out his assignment his entire body is strained; glare, dimness, poor contrast show bad effects in the severe dilation of his pupil during the course of the day and collapse of the visual fields of his retina; being nervous, fatigued and with his eyes far below par, he naturally risks accidents."

—*New Brunswick, N. J., Times*, December 21, 1947.

Guide to Wise Eating

THE New York State Food Commission is presenting an educational and informational program to help consumers keep food budgets down, keep their health and vigor up, and still help provide enough food at least to prevent starvation abroad. Its nutritionists have prepared a series of leaflets, one of which is "A Short Guide to Wise Eating." (Copies are available from DR. LEONARD GREENBURG, Executive Director, N. Y. Department of Labor, Division of Industrial Hygiene, 80 Center Street, New York 17, N. Y.)

—*Industrial Hygiene Digest*, February, 1948.

Air Pollution

MORE than 700 people die every year from air pollution in Chicago alone, and a proportionately large number die from the same causes in other American industrial cities. That is what Dr. Clarence A. Mills, of the University of Cincinnati, told the Pan American Doctor's club (at San Miguel de Regla, Mexico). Respiratory illnesses, many of which are due to air pollution, also are responsible for about 70% of the time lost from work, Dr. Mills said. He pointed out that even such cities as Los Angeles and Mexico City, which once boasted of their fresh air and sunshine, now "find themselves buried much of the time beneath an irritating canopy of pollution." Dr. Mills reported on studies made in Chicago, Detroit, Pittsburgh, Cincinnati, Nashville, Birmingham, and Atlanta. He said pneumonia, respiratory tuberculosis and lung cancer all became increasingly frequent and severe as investigators moved from the cleaner city suburbs into the dirty air of the industrial and business districts. He said fatalities were three to 10 times heavier among men than women. He pointed out that a generation ago, cancer of the respiratory tract was a rare disease. He said that now "it ranks very close to pneumonia and pulmonary tuberculosis as a cause of death in males in Chicago."

—*Chicago Daily News*, March 1, 1948.

Half-Pint of Milk

THE Thermoid Company of New Jersey continues its wartime practice of giving each employee a half-pint of milk during the five-minute rest period. The recess is scheduled before the high point in fatigue is reached. In some departments output has increased by as much as 15% during the hour following the rest period. Milk and rest period are significant factors in boosting production. Just as important is the workers' appreciation of the company's interest in them; they reciprocate by making extra efforts.

—*The Foreman's Letter* (October 8, 1947), quoted in *Industrial Hygiene Digest*, December.

Industrial Psychiatry Fellowship

A PIONEER program to train psychiatrists for the industrial relations and labor field will be inaugurated at Cornell University with an industrial psychiatry fellowship offered in the School of Industrial and Labor Relations. The Carnegie Corporation has made a supporting grant. The fellowship will be awarded to a physician with experience in psychiatry and will provide two years of training at the school. In addition to classroom study in basic industrial and labor relations courses, the fellow will receive training in human relations work in a plant, labor union or government office.

—*J.A.M.A.*, March 6, 1948.

He Gets a Rest

WHEN a British factory worker hauls off and lands a haymaker on his foreman's nose, he is a candidate for a free rest cure at Roffey Park. This rest home for tired, repressed and disconsolate workers is making industrial rehabilitation history. Nearing the fourth anniversary of its existence, it is one of the world's modern amazing places. About 30 miles from London in a rural mansion just out of Horsham, Sussex county, Roffey Park is financed by 100 industrial firms who want their employees to be happy as well as efficient. Suffering from various inhibitions, repressions and maladjustments, about 100 men and women patients can be accommodated at one time. They come and putter about in a workshop, take exercises in the gymnasium, sit under trees and concentrate on getting themselves readjusted to work and to life. Some are chronically late for work because they don't like the boss, persons working next to them, or their wives. Some sulk at a job or spend their time day-dreaming or clock-watching. Some pick fights, or suffer from other mental quirks. Trouble making or daily irritability are two symptoms firms watch for, and the suggested cure is a trip to Roffey Park to try to get straightened out. Some stay a month, or two. Average time is six weeks.

—ERNIE HILL, *Chicago Daily News*, February 28, 1948.

Wisconsin Health Pamphlet

OUR STATE, one of the pioneers in the development of industrial hygiene, now has nearly 500 industrial nurses who are employed among 201 manufacturing plants, it was reported by the state health department. These health workers are graduates of nursing schools and are registered nurses. At the outset of this year they numbered 486, not including a considerable number of first-aid workers trained to assist them in emergencies. So useful has the industrial health program proved to employers as well as their workers that the State Medical Society and the industrial hygiene unit of the state board of health are jointly publishing a 50-page guide for doctors and nurses in industry, the society reports. The pamphlet, entitled "Industrial Health," will soon be off the press. It sets forth general principles and procedures for doctors and nurses in this field, and includes standing orders for nurses, covering all conceivable emergencies.

—*Eau Claire, Wisconsin, Leader*, February 3, 1948.

In the Deep South

AT ONE point Frank O. Wahlstrom (president of the Southern States Iron Roofing Co. of Savannah, Georgia) couldn't find an insurance company that would provide group life insurance covering Negroes He would be "eternally damned" if he'd give insurance to one group of workers and not to another. Wahlstrom proved through the records of his medical department that his Negro employees were just as healthy as his white workers—and got the first group-insurance policy written in the South to include both races. It is difficult for Negroes to get adequate medical service in the South. Physicians of their own race are rare, and white doctors are already overloaded with their clientele of white patients. But five-year employees of Southern States can call a company doctor who will go to their homes to treat them or their families. Specialists can be summoned. And if employees don't want the company doctor, the company will pay part of the fees of a physician of their own choice.

—From "He Makes Security Profitable," in *Modern Industry*, February 15, 1948.

Fifth Post-graduate Course in Industrial Medicine

THE Institute for Occupational Health of the Long Island College of Medicine is presenting the fifth of its intensive postgraduate courses in industrial medicine during the two weeks, April 5-16, 1948, with an imposing schedule of lectures and demonstrations. The course will be conducted by leading physicians in industrial medical practice, authorities in allied fields and members of the faculty of the College. The main objective is to provide physicians who are planning to enter industrial medicine, as well as those now engaged in this type of practice, an opportunity to become familiar with modern procedures and recent developments in this rapidly expanding specialty. The program has been arranged primarily for physicians, but will also be of value to nurses, industrial hygienists and engineers, personnel workers, representatives of management and labor and others interested in health in relation to occupation. The Industrial Medicine Advisory Committee, which has directed the planning and arrangement of the courses, is as follows: JOHN J. WITTMER, M.D., Chairman, Assistant Vice-President, Consolidated Edison Company of New York; S. POTTER BARTLEY, M.D., Clinical Professor of Surgery, Long Island College of Medicine; JEAN A. CURRAN, M.D., President, Long Island College of Medicine; J. DEWEY DORSETT, General Manager, Association of Casualty and Surety Executives; THOMAS D. DUBLIN, M.D., Professor of Preventive Medicine and Community Health, Long Island College of Medicine; LYDIA G. GIBERSON, M.D., Industrial Psychiatrist, Metropolitan Life Insurance Company; IRVING GRAY, M.D., Chairman, Subcommittee on Industrial Medicine, Medical Society of the County of Kings; ANTHONY J. LANZA, M.D., Director of the Institute of Industrial and Social Medicine, New York University College of Medicine; MELVILLE H. MANSON, M.D., Medical Director, American Telephone and Telegraph Company; HENRY D. SAYER, General Manager, Compensation Insurance Rating Board; FREDERICK H. SHILLITO, M.D. Medical Director, Atlantic Division, Pan American World Airways System; L. HOLLAND WHITNEY, M.D., Medical Director, Sperry Gyroscope Company.

NYU College of Medicine

MEDICAL directors of some of the nation's largest corporations are frequent contributors to *Health on the Job*, now being published by the faculty of the New York University College of Medicine, with a circulation among executives of New York City business firms. *Health on the Job* made its initial appearance in May, and is now being published monthly. Outgrowth of plans now being perfected for the Institute of Industrial and Social Medicine, an integral part of the proposed $15,575,000 New York University-Bellevue Medical Center, the publication is dedicated to new developments in the industrial health field, with particular emphasis on timely interviews with medical directors of large and small firms. DR. ANTHONY J. LANZA, Associate Medical Director of Metropolitan Life Insurance Company, and new director of the Institute, describes the publication as "an attempt to satisfy the increasing interest in industrial medicine as a definite economic factor. With sick absenteeism making increasing inroads in our economic well-being, business and industry must look to its health future if this nation expects to maintain its world leadership."

—*Medical Times*, February, 1948.

Wisconsin In-Plant Industrial Health Clinics

SIX counties in the industrialized areas of Wisconsin are conducting industrial health clinics during the next three months. They are being developed by industrial health committees of the various county societies, in cooperation with the Industrial Health Committee of the State Medical Society and the Industrial Hygiene Unit of the State Board of Health. The following tentative schedule has been agreed upon: *March 31:* Rock County: G. H. PETERSON, M.D., Beloit, Chairman. The Fairbanks-Morse Plant at Beloit will be visited 2:00 to 4:00 P.M., followed by a review of industrial hazards by E. L. BELKNAP, M.D., Milwaukee, and PAUL A. BREHM, M.D., director of the Industrial Hygiene Unit of the State Board of Health, who will serve as medical consultants. A dinner meeting will be held, with industrial nurses, insurance carriers, representatives of management and labor, and physicians in attendance. A prominent industrial leader will be chosen as one of the speakers. The second speaker will be MR. HARRY NELSON, director of the Workmen's Compensation Division of the State Industrial Commission. *April 15:* Outagamie and Winnebago Counties: J. B. MacLAREN, M.D., Appleton, and T. D. SMITH, M.D., Neenah, joint chairmen. The Kimberly-Clark mill at

Neenah will be visited 2:00 to 4:00 P.M., followed by a scientific session under the direction of DR. BREHM as one of the consultants. A dinner meeting for physicians, industrial nurses, insurance carriers, and representatives of management and labor is being planned. Speakers to be announced. *April 21:* Racine and Kenosha Counties: R. M. KURTEN, M.D., Racine, chairman. While plans are still in a formative stage the program will follow the same general pattern of the Rock County clinic described above. The clinic will be held in Racine. Details will be released to all members of the Racine-Kenosha societies and adjoining medical societies. *May 6:* Dane County: J. W. BROWN, M.D., Chairman. Plans are still in the formative stage, but it is possible that the Gisholt Machine Company will be selected for visitation. Details will be sent to all members.

Repetition of Accidents

IN A NUMBER of occupations at a Royal Ordinance Factory (Engineering), the accidents of individuals who have sustained two or more accidents are studied. The following conclusions are reached: (1) That individuals who have more than one accident are more likely to have accidents of the same type than is to be expected from the risks of their occupation. (2) Three hypotheses to account for this are studied: (a) they tend primarily to have accidents at the same operation, (b) they tend primarily to injure the same part of themselves, (c) they tend primarily to suffer the same nature of injury. None of these hypotheses fits the data satisfactorily, but (a) is the best. Further work on a larger scale is suggested, to try combinations of the hypotheses. (3) An indication is given of possible practical applications.

—"A Study of Repetition of Accidents," by ARCHIBALD and WHITFIELD, in *British J. Indust. Med.*; author's summary in *Industrial Hygiene Digest*, December, 1948.

Progress and Prospects

IN THE last analysis, a considerable share of the problems of industrial health boil down to these three: (1) Is this environment a safe and healthful place in which to work? (2) Is this worker properly equipped physically and temperamentally for the work he is doing or for which he is applying, and if not how can he be fitted to perform it? (3) Is this physician properly equipped to recognize and control forms of disability most likely to occur in plants or in occupational groups under his supervision? In each of these fields attempts are being made to apply the techniques of standardization and certification. Plants are already being inspected for hazards to health and safety. Industrial medical departments are being approved as fulfilling certain minimum standards. In keeping with the times, it is proposed that physicians limiting practice to industrial medical affairs demonstrate their qualifications as specialists before a certifying board. These prospects, whatever else may be said about them indicate that industrial health is a province in medicine of great vitality and with most interesting potentialities. Many of its important aspects which only physicians are equipped to perform are virtually unexplored. Here, perhaps, is one of the few remaining opportunities for the extension of needed medical service on the basis of personal initiative by industrial physicians. Again, developments which have already occurred may be the spearhead leading to nationalization of certain forms of medical service. In any event, the highest type of medical leadership and diplomacy is needed to see that the essential interests of the worker, the employer and the physician are properly understood and intelligently safeguarded.

—From "Industrial Health—Progress and Prospects," by DR. CARL M. PETERSON, in *Plantation Health* (Hawaii), January, 1948.

Company Medical Programs

THIS report provides statistics based on a survey of 45 companies, having 560,000 total employees. In some cases data were for a group of representative establishments, in others for all plants. The average annual cost of a medical program was $9.42 per employee, varying from 71 cents to $24. There was no correlation between this cost and size of company or plant or character of services offered. The total personnel of medical departments in the 45 companies was 1,326, including 25 medical directors, 156 full-time and 254 part-time physicians, eight physicians on call, 572 full-time and 16 part-time nurses and 295 other staff. The size of establishment is an important factor in determining the basis of employment of physicians. Nurses were employed at 84% of the locations. Plants without nurses, except a few of the smallest, provided physician's service on some basis. Nearly all full-time physicians, and 60% of part-time physicians, are paid salaries, and others fees. About a third of the full-time physicians are permitted to engage also in private practice. An x-ray machine is used in 35% of the establishments, a cardiograph in 20%, and basal metabolism equipment in 5%. Figures for each plant are tabulated.

—From "A Study by Industrial Relations Counsellors," abst. in *Industrial Hygiene Digest*, December, 1948.

Industrial Welfare in Britain

THE WAR saw substantial progress in industrial health services. The number of full-time doctors grew from 35 in 1939 to 143 by 1946, part-time doctors from 70 to 903, and nurses to about 7,600. Some factories instituted dental and chiropodical services. Comprehensive arrangements were made in the Liverpool, Manchester, and Clydeside dock areas, in cooperation with the Ministry of War Transport, the dock authorities, and the Local Authorities and hospitals. Measures to prevent industrial ill health included not only research into unhealthy processes, but also into fatigue elimination and the optimum heating, lighting, and ventilation. Vigorous educational campaigns in hygiene and accident prevention have been pursued. Cooperation in industrial health research between Government Departments, the Medical Research Council, and welfare departments was strengthened in March, 1943, with the founding of an Industrial Health Advisory Committee and specialized Advisory Panels. The first Chair of Industrial Health was set up in the University of Manchester in February, 1945. Industrial rehabilitation methods have also received attention. An additional health safeguard was the canteen system. Canteens must be set up in all factories with over 250 employees, and may be set up in smaller concerns. By December 31, 1945, there were over 12,000 serving hot meals as well as snacks and beverages. But canteen meals and these industrial health services have continued into peace. Though it is hoped they will eventually be absorbed into the National Health Service, this will probably take some time, since industrial health services are highly specialized.

—From "Health Services in Britain," I.D. 753, October, 1947.

Occupational Dermatosis

THE term "occupational dermatosis" is really more a medicolegal than a clinical term. Officially it has been defined as "a pathologic condition of the skin for which occupational exposure can be shown to be a major causal or contributory factor." It should be noted that this definition does not exclude the aggravation of exacerbation of a pre-existing dermatosis by the occupational exposure. The list of compensable diseases in the North Carolina Workmen's Compensation Act includes: "Infection or inflammation of the skin or eyes or other external contact surfaces or oral or nasal cavities due to irritating oils, cutting compounds, chemical dust, liquids, fumes, gases or vapors." Metallic poisoning; chrome ulceration; epithelioma due to tar, pitch, bitumen, and so forth; blisters due to use of tools, radium poisoning; and injury by x-ray are also specified. In effect, these provisions cover most dermatoses due to occupational exposure. It is timely at this point to warn against jumping hastily to a "*post hoc, ergo propter hoc*" conclusion in these cases. The mere fact that a patient's job involves exposure to one of the above substances does not by any means prove that his dermatosis is due to that exposure. The physician should record a detailed history, including the patient's habits and exposures *away* from work as well as those at work, and should perform, or have a consultant carry out, patch tests and other special studies when indicated, *before* rendering his final opinion as to the etiologic agent in each case.

—From "Management of Occupational Dermatoses," by DAVID G. WELTON, M.D., in *North Carolina Med. J.*, February, 1948.

Industrial Medicine Services in France

THE Industrial Medicine Service in France has been greatly strengthened by a recent law. The industrial physician's place as adviser on all conditions of work, supervision of general hygiene and the adaptation of workmen to particular jobs. He is required to make examinations of all employees yearly, and those under 18 every three months. Autopsies are to be performed when required by the Social Security Fund. Enterprises employing 15 to 20 persons must procure the attendance of a physician for an hour monthly; a company employing 500 must have a special medical service. Industrial enterprises must provide one nurse for 200 employees and two for from 800 to 2000. The independence of industrial physicians is guaranteed, and a diploma of "industrial hygienist" must be given on due qualification. Another law passed at about the same time (October 30, 1946) provides compulsory accident insurance under the management of the Social Security Fund. An accident is considered occupational if it occurs on the way to or from work. The main point of the new law consists in the organization of a system of prevention and of profession readaptation.

—Paris Letter, *J.A.M.A.*, November 29, quoted in *Industrial Hygiene Digest, December*, 1948.

First Industrial Cancer Clinic

DR. M. N. NEWQUIST, Medical Director, The Texas Company, some time ago made the statement at an AAIP&S meeting that industrial medical departments could become very effective cancer detection clinics. JOHN M. GIBSON, writing in *Kiwanis Magazine* for February, 1948, describes one that has—at Avondale Mills, Sylacauga, Alabama, where FRENCH H. CRADDOCK, M.D., F.A.C.S., is Medical Director and Chief Surgeon. Speaking of the Mill's "cancer detection clinic," MR. GIBSON says: "When it began in July, 1944, it was the first of its kind in this or any other country. So far as is known, it still is. The Avondale Mills could not be improved upon as the site for such a piece of cancer pioneering. Under the enlightened guidance of President Hugh Comer....that large firm has long been providing for its employees one of the most progressive health-care programs ever launched by American industry. For only slightly more than two dollars a month, every voluntarily participating worker (and that means 99 out of every 100) and every one of his or her dependents receive complete medical care, from a dose of medicine for a slight cold to a major operation in the company's modernly equipped and expertly staffed hospital. If the sick or injured person does not live more than five miles away, house calls by company physicians are also included among the services rendered. That liberal health-protection policy has paid dividends, first, in better health and decreased absenteeism, second, in employee morale and loyalty to the company and, third, in willingness to cooperate with Mr. Comer or anyone else wishing to try anything new in the way of health protection. That last, even without the others, would have made the Avondale Mills a perfect set-up for the world's first industrial cancer clinic. For everybody interested in it knew that, in the final analysis, its success or failure would be determined by the unpressured willingness of the mill employees and their families to avail themselves of it. (To use pressure, even for such a worthy cause, would have been contrary to the Avondale tradition)....When Mr. Comer was approached about the matter, he showed immediate interest and then enthusiasm. Of course he would allow the clinic to be set up in the firm's Drummond-Frazier Hospital. Of course those participating in the clinic's benefits would receive full pay for the time spent there. Of course the expense of operation would become a company responsibility....The clinic itself naturally is essentially diagnostic. Those attending its sessions, held on Monday, Wednesday and Friday afternoons, receive the most thorough physical examinations, with special attention to indications of possible cancer. The physician in charge, a father-and-son team composed of the DRS. FRENCH H. CRADDOCK, SENIOR and JUNIOR, have had considerable experience in cancer diagnosis.... Whenever a case is found, the victim is eligible for treatment under the company's liberal medical care program. Thus from diagnosis to final cure (if the disease is not too far advanced when discovered) the bugaboo of heavy medical expense never appears to disturb the mind and impede recovery....The Sylacauga clinic is making two major contributions to the campaign against cancer. The first, obviously, is the saving of lives directly by finding cases in an early curable stage and getting them under treatment without delay. The second is to provide the medical profession, medical schools and cancer organizations throughout the world with valuable data based upon the results of the periodic examinations given the same large group over a period of several years. Its records now contain the names of more than 650 persons, some of whom have been examined every six months since the clinic opened. Other names are constantly being added as new employees take jobs with the Avondale Mills and old ones are prevailed upon to participate in the

program. Among the participants to date the DRS. CRADDOCK have found eight cases of cancer of the cervix, five cases of cancer of the breast, three cases of cancer of the skin, two cases of cancer of the ovaries and one case each of cancer of the stomach, the pelvis and the foot—21 in all. Only five of those cases proved fatal, and the recovery outlook for all those whose condition was not already serious when first examined is considered good. Everyone attending the clinic is urged to keep up those twice-a-year visits for five years, and the company's policy regarding attendance as work for pay purposes has been an excellent inducement to regularity. There is no compulsion of course about stopping at the end of five years, and no doubt a considerable number of those who were on hand at and soon after the launching of this unique experiment in life-saving will continue to exchange experiences in the waiting room with nervous first-timers well beyond mid-1949.... At present the clinic's beneficiaries are limited to the mill's female employees and female members of male employees' families. The decision to impose this restriction, however, was made reluctantly in the face of the hospital's limited physical facilities and personnel and is by no means final."

"Public Health in a Changing World"

DR. CAREY P. MCCORD, of Detroit, and DR. JAMES G. TOWNSEND, Chief, Industrial Hygiene Division, USPHS, spoke before the Health Workers Association of Jefferson County, Alabama, on Thursday, January 29, on occupational health problems in that state. Newspaper comment on their talks follows: *Birmingham, Alabama News:* "For a year now a quiet but widely effective effort has been going forward in Birmingham in the interest of the health and happiness of industrial workers. It has been carried onward by the Birmingham Industrial Health Council. From a small nucleus, its membership has grown until it includes 57 industries, employing many thousands of workers. It has had the active support of the Department of Health, the Anti-Tuberculosis Association and other groups specially interested in this field. It now enters a second year, following its first annual banquet Thursday night....It is highly desirable that the people of this community come to know more about this excellent work. For, of course, aside from its humanitarian aspects, good health among workers is a matter of the utmost importance to the whole community in many ways—strikingly, in ways of dollars and material well-being. DR. JAMES G. TOWNSEND, Chief, Industrial Hygiene Division, U.S. Public Health Service, and DR. CAREY P. MCCORD, Medical Director of The Industrial Health Conservancy Laboratories, Detroit, presented at the banquet an outline of the significance and scope of this work in the United States. Only a beginning has been made. They emphasized that. Occupational diseases among workers, as distinguished from accidents, are a vast problem—a costly burden, a cause of much and grievous affliction. There are 25,000 ways of making a living, said DR. MCCORD. Probably four out of five of these involve health hazards. The losses suffered by individuals and communities from such causes are very great. Moreover, there is much that needs to be done about heightening the satisfaction of workers in their work. Unhappy workers, suffering from a sense of futility, are a drag on themselves and others. No little has been learned in this field. But it is only a small part of what can be known. A substantial amount of work is being done; but far more can be. DR. TOWNSEND told of the far-spread efforts of his division and of the program of a similar division of the State Health Department. But, he emphasized, all the people have a part in supporting this advance. Birmingham's Industrial Health Council is an example of community action. It has developed remarkably in a year's time. But it can be greatly expanded. It is in the interest of all industrial employers and all such employees to join in this program. DR. MCCORD suggested an occupational disease compensation system as one helpful step, declaring its cost would be relatively trivial. Blood and tuberculosis tests already have been included in the Birmingham program. Much educational work has been done. What has been accomplished serves as a high challenge to do the great deal more that should and can be done." On January 30, in Munger Auditorium of Birmingham-Southern College, DR. MCCORD gave the first of the annual series of Judson Davie Dowling Memorial lectures. This was titled "Public Health in a Changing World," and was presented under the auspices of Howard College, Birmingham-Southern College, and the Department of Health of Birmingham and Jefferson County. DR. HARWELL DAVIS, president of Howard College read a biographic address on Dr. Dowling. DR. MCCORD'S lecture was the subject of numerous comments in newspapers throughout the south. Typical are the following: *Asheville, N. C., Times:* "He estimated that the average I.Q. was dropping about five points a generation, which would be a serious impairment over a period of several generations if not stopped." *Greensboro, N. C., Daily News:* "There are times in any professional man's life when the most satisfying pleasure is letting off steam. To that category can most charitably be assigned the remarks made formally in Birmingham recently by DR. CAREY P. MCCORD. According to the United Press, which may have misquoted the good doctor, but probably did not, DR. MCCORD stated: 'Through public health and similar advances we are saving many men and women who otherwise would have died. That would be all to the good—except many of these individuals are mentally and physically inferior. They reproduce at a rate about 2.2 times that of those on a higher intellectual and financial level. There we appear to be breeding a race of mental incompetents that may engulf us.' There we have an old worry to add to the new preoccupations which distress us—those of us on 'a higher intellectual and financial level' are confronted with a dire threat of being overrun by the progeny of the mentally and physically inferior. What does DR. MCCORD think we should do about it? He does not know. He is tempted to fear that 'we are hooked—by our own scientific achievements—unless we can find some way of putting brains in empty heads or of controlling births.' To be sure, the problem finds one solution in countries (we usually refer to them as 'backward') which permit 'natural means' to operate; the 'fittest' survive. In this country, alas, DR. MCCORD thinks the advances we have made in industrial and public health may ultimately reduce us to a nation of 'nincompoops whose highest attainments would be as bubble gum artists, comic strip addicts, and juke box musicians'....Yet it must be conceded that in his flippancy DR. MCCORD gave his hearers something to think about. He and

others concerned with public health could do worse than try to put brains in the empty heads of those men and women on the 'higher intellectual and financial level' who are content to let the underprivileged have most of the children."

"You'll Be Sorry"

FROM the above-quoted doleful and lugubrious warning, a certain radio show derives its popular gag line. After reading "State Labor and Industrial Inspection Laws"—which contain the Missouri statutes covering industrial health—one feels that, from a physician's standpoint, this title is portentously appropriate. How many physicians know, for instance, what substances the Missouri law regards as "dangerous to health?" Or, what duties or precautions the industrial physician is legally obliged to fulfill regarding such "articles?" Or, the penalties he may receive, if he ignores the statutes? The answers are so generally unknown and the ignorance of such law is so widespread as to warrant calling attention to their existence throughout the State Medical Association membership. Almost all physicians avoid, if possible, reading long, legal phraseology. But, almost every practitioner in the State of Missouri is involved—daily or less often—in the three short paragraphs quoted: *"Section 10212. Articles considered dangerous to health.* —The carrying on of any process, or manufacture, or labor in this state in which antimony, arsenic, brass, copper, lead, mercury, phosphorus, zinc, their acids, fumes, vapors, gases, or other substances, are generated or used, employed or handled by the employees in harmful quantities, or under harmful conditions, or come in contact with in a harmful way, are hereby declared to be especially dangerous to the health of the employees." From this it would seem that the author "threw the book at his subject. One might conclude that almost any manufacturing process is "dangerous" from the all-inclusive list of "articles" quoted. But since sawdust is not mentioned, the "Missouri Meerschaum" industry and raising mules would seem safe, although the latter occupation is fraught with traumatic probables, well known to all who have been so employed. The industrial health supervisory or medical duties which apply to these manufacturing process follows: *"Section 10214. Employees to be examined monthly by physician.*—Every employer engaged in carrying on any process or manufacture referred to in Section 10212 shall, as often as once every calendar month, cause all employees who come into direct contact with the poisonous agencies or injurious processes referred to in Section 10212, to be examined by a competent licensed and reputable physician for the purpose of ascertaining if there exists in any employee any industrial or occupational disease or illness or any disease or illness due or incident to the character of the work in which the employee is engaged." This provision is not generally carried out, as would be expected. Yet, following is the real portion which prompted this editorial. Here is the part of the law which every physician in Missouri should thoroughly understand! *"Section 10215. Physicians to make report to state board of health—penalty for failure.* It is hereby made the duty of any licensed physician who shall make a physical examination of any employee under the provisions of Section 10214, to make within twenty-four hours a triplicate report thereof to the state board of health of the state of Missouri upon blanks to be furnished by said board upon request, and if any such disease or illness is found, the report shall state the name and address and business of such employer and the nature of the disease in precise and definite terms of all the diseases or illness with which the employee is afflicted and the probable extent and duration thereof, the name and business of employer, and the last place and length of employment. Provided, that the failure of any such physician to receive blanks from the state board of health for making such a report shall not excuse the physician from making the report as herein required. Any physician who shall fail to make a report as required by this section shall be deemed guilty of a misdemeanor and upon conviction shall be fined not less than fifty dollars ($50.00), and in each case shall stand committed until such fine and costs are paid unless otherwise discharged by due process of law." No physician can possibly know every statute or law. Even the lawyers do not profess such omniscience. Nevertheless, every child is taught that ignorance of the law is no excuse. Therefore, attention is called to these three statutes, which especially apply to industrial health. This is done with the hope that more respect will be given to the duties (and the penalties for violations) of industrial physicians, whether occasionally or regularly consulted in this field. Otherwise, as the voice on the radio program says, "You'll be sorry."

—Editorial by VINCENT T. WILLIAMS, M.D., Chairman, Committee on Industrial Health, in *Missouri State Med. J.*, February, 1948.

Industry's Point of View

THE demand has risen in the same quarters as the demand for socialized medicine that a cash sickness-benefit plan be made compulsory for industry. Rhode Island now has such a plan based on the employment security or state fund system. California has a plan financed through a state fund, to which contributions are made as set by law or through private plans under state supervision. New Jersey is considering a proposal, which to date has not become law, for a sickness-benefit plan for industry, to be financed by private operation under state supervision. After a careful study of these systems, the Advisory Council recommended that if such a system were instituted it be a privately operated plan under state supervision with the establishment of minimum standards that would preserve the present plans in operation throughout the state. This, I think, is absolutely essential if such a plan is to be put into effect. Industry, however, is not yet ready to accept a compulsory cash sickness-benefit plan. The Advisory Council in its first report to the General Court in 1945 stated as follows: ".... the role of government should be one of added impetus to the establishment and expansion of private plans rather than in direct participation. The remarkable growth of group insurance, Blue Cross hospitalization and prepaid medical care, in addition to the long-established individual health and accidents insurance policies, is evidence that in Massachusetts private enterprise is meeting the problem and will continue to assume its responsibility if permitted to do so." This, I believe, is still the point of view of industry, and I think that it coincides with the basic principles expressed by the Massachusetts Medical Society.

—From "What Industry Thinks about the Massachusetts Medical Society's Program of Medical Care...." by JARVIS HUNT, in *New England J. Med.*, December 25, 1947.

NEW BOOKS

British Surgical Practice

BRITISH SURGICAL PRACTICE. Under the General Editorship of SIR ERNEST ROCK CARLING, F. R. C. S., F. R. C. P., Consulting Surgeon, Westminster Hospital, and J. PATTERSON ROSS, M. S., F. R. C. S., Surgeon and Director of Surgical Clinical Unit, St. Bartholomew's Hospital; Professor of Surgery, University of London. In eight Volumes (With Index Volume), Volume I. C. V. Mosby Company, St. Louis, Missouri.

WE HAVE just been privileged to review this handsome volume from the press of C. V. Mosby Company, of St. Louis. It is indeed encyclopedic in its scope and arrangement. Printed on the best quality gloss paper, this first volume comprises 486 pages of reading matter and 228 excellent illustrations, besides a 50-page index to this one volume, arranged alphabetically and analytically in a most convenient manner.

As one looks over the list of Consultant Editors and contributors, Editor-in-Chief and Associate Editors for Special Subjects, one is conscious of having called the roll of the top men in British surgical practice. All are heads of departments in one or another of the famous institutions of the British Commonwealth.

The Introduction was written in August, 1947, and the work turned over to the publishers in St. Louis; Durban, South Africa; Sydney and Melbourne, Australia; Toronto, Canada; Bombay, India; and Auckland and Wellington, New Zealand, through the auspices of Butterworth and Co. (Ltd.), of London, England.

Many of the contributors began, and some completed, their work prior to the recent war. Others worked upon their contributions during the trying days of the war. While it is apparent as one reads the various sections that every effort is made to conform to the mandate of the Editors that surgeons everywhere should be shown, in so far as the printed word can do so, what can be accomplished by the expert working with this chosen team in optimal conditions, yet it is also apparent that the subject matter is bound to be of great value to all who have to care for and advise patients—not only to surgeons. The General Editors, having carefully chosen the men they felt to be outstanding, are willing to stand back of their texts as presented even though in some instances they may not fully agree as to details.

The first chapter is on Abdominal Emergencies and is contained in 12 compact pages beginning with Definitions and covering the Diagnosis of 12 acute abdominal conditions with the analysis of each condition from pathology through to treatment and prognosis. Characteristically, John Morley, CHM, F.R.C.S., Professor of Surgery, University of Manchester, is quite capable of going into the diagnostic points in gastric crises and basal pleurisy and discusses them as capably as would an internist.

The second chapter deals with Abdominal Pain and is well illustrated to show pathways, pain-sensitive structures and localization areas. Deep and superficial pain are defined and root pain described and a short historical paragraph is included. For surgeons or internists this chapter contains invaluable data in concise form.

Following are chapters alphabetically arranged from Abdominal Wall, Abortion, Abscess, Achlorhydria and Appetite, Acidosis, Actinomycosis, through Adhesions, Adiposity, Adrenal Glands, on down to Arthritis, Artificial Limbs, and concluding with Automatic Nervous System, Arteries.

From this outline it is apparent that chapter titles are chosen by importance or significance to the surgeon rather than by scientific entity or anatomical nomenclature. To go into any great detail is beyond the scope of a review and therefore we shall confine ourselves to an analysis of one more chapter—that on Arthritis—Surgical Considerations, by Norman Copener, F.R.C.S., Orthopedic Surgeon, Princess Elizabeth Orthopedic Hospital, Exeter.

Thirty-five pages are devoted to a masterful discussion of the arthritis problem, and the entire first page of the chapter is given over to an outline of the contained sections with page numbers. The classification used is concise and simple:

"1. Acute arthritis, including that occurring in the acute specific fevers.

2. Rheumatoid (atrophic) arthritis.

3. Arthritis of childhood (or Still's disease).

4. Menopausal arthritis.

5. Osteoarthritis (hypertrophic including traumatic arthritis).

6. Spondylitis, of three types: (a) ankylosing or atrophic, (b) osteoarthritic—also including traumatic—and (c) senile atrophic orosteoporotic.

7. Other arthritic conditions: (a) periarthritis, (b) vascular lesions, (c) synovial chondromatosis."

Then follows a section on Definition and Etiology in which the roles of infection and trauma are well discussed. Following this are sections on Morbid Anatomy, Clinical Features, Causes of Deformity, Radiographic Features, and Treatment which last is expanded to include discussion of environment in prevention and treatment, psychological effects, use of vaccines, rest, surgery, mobilization and a number of other considerations. A very useful table is given of optimal positions for treatment of arthritic joints. Appliances, use of plaster of Paris and physical therapy are well handled by the author, and the chapter concludes with a large section dealing with operative surgical procedures. Diagrams and photographs render this a most valuable storehouse of information.

Finally, one must conclude after a study of this first volume, that medical literature has been enriched and the practicing physician, as well as the surgeon, have been well advised upon the methods available to diagnose and to treat a vast proportion of human afflictions. We look forward with interest to future volumes in the knowledge that here truly is an encyclopedia of practical surgical knowledge.

—EDWARD P. HELLER, M.D.

INDUSTRIAL MEDICINE

EXECUTIVE, EDITORIAL, AND PUBLICATION OFFICES: 605 NORTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

Editor: C. O. SAPPINGTON, M.D., DR. P.H.

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Pregnant Phrases

IN TIME, no doubt, there will emerge from the literature of industrial medicine an assembly of those short, pithy and instructive sentences which compress so much of meaning and implication into small compass—such sentences, for example, as make up books like Bartlett's Familiar Quotations. This field has many men who can turn a phrase "which time need never edit," and their published works already contain enough of such phrases to suggest that the anthologist who is to collect and preserve them so that they may be quickly available for the spice of ready reference and apt quotation, could well begin now. This thought is inspired by several current gems of expression.

One is by DR. ALFRED H. WHITTAKER, contained in his chapter "Occupational Diseases of Musicians," pages 218-243 of the new book "Music and Medicine," by Schullian and Schoen (published by Henry Schuman, Inc., 1948): "We cannot label as professional diseases all those which appear within a profession."

Another is by DR. ROBERT A. KEHOE, in an article in *Occupational Medicine:* "The industrial physician is a physician in industry, not outside of it. His province is to live with industry and to guide it in matters of health, not to make his living on its mistakes."

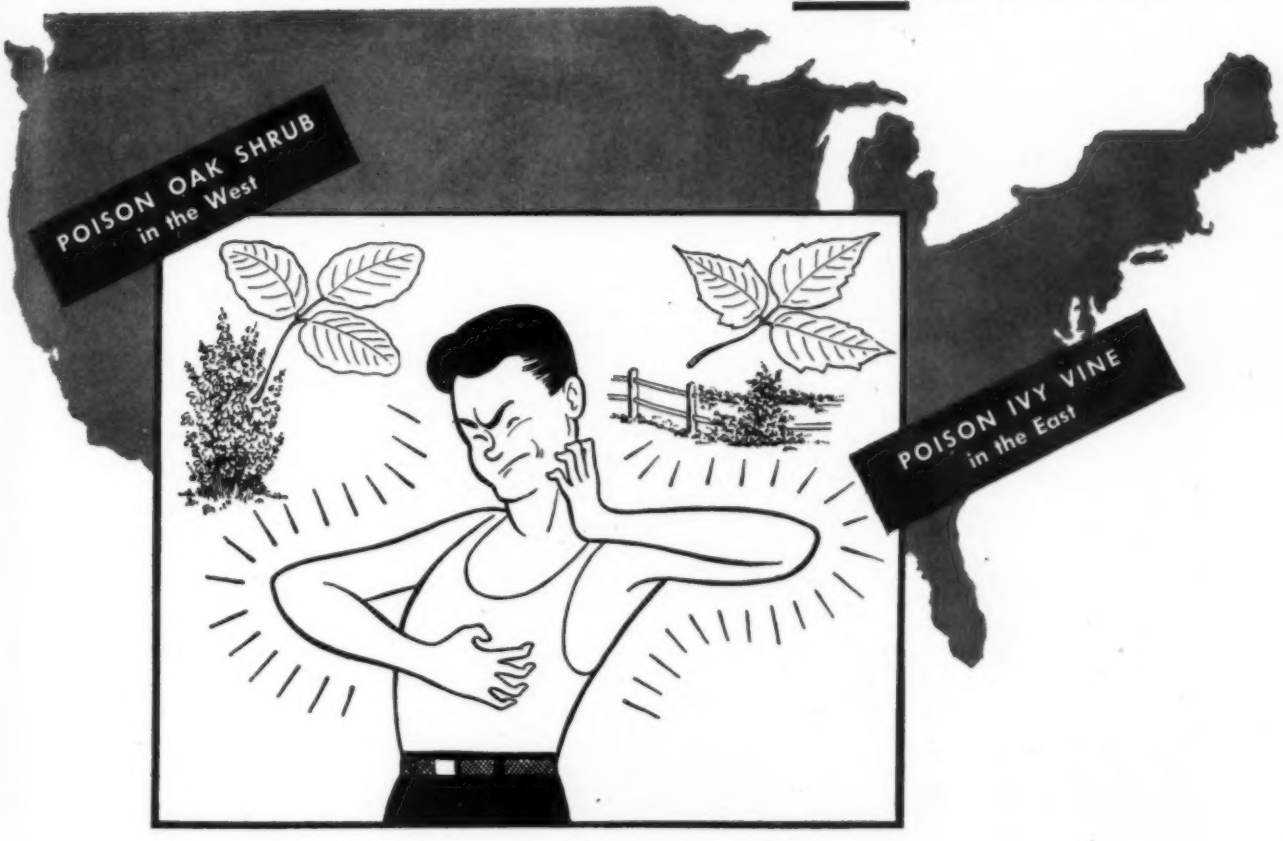
And a third—more definition than apothegm—appears in a C. V. Mosby circular describing DR. RUTHERFORD T. JOHNSTONE'S new book "Occupational Medicine and Industrial Hygiene." It is: "Occupational medicine is that phase of practice which is concerned with the working and living habits of the worker as well as with the physical conditions under which he works and lives." Some may conclude that this takes in too much territory. Others will interpret it as conforming to the newer ideas—*vide* the recent First Industrial Conference on Alcoholism. As a definition it will stand analysis.

Along the same line as a classic of its kind—though not in industrial medicine—is the concluding sentence of a review by DR. THURMAN RICE of John Gunther's recent best seller, "Inside U.S.A." DR. RICE says ". . . .it is my studied opinion that this book is a shallow, poorly written, impudent, inaccurate, highly commercialized bushel of words on a subject deserving either deep study or deep silence."

We're on Our Way

A NORTH CAROLINA editor waxes a bit sarcastic about DR. McCORD'S "Public Health in a Changing World" (see page 157) in which "the good doctor" expressed concern lest be become a "nation of nincompoops." Instead of decrying the prophecy as to where we may be going, the editor might better deplore the fact that we're already well on our way. Mark Twain said it: "To create man was a fine and original idea; but to add the sheep was tautology." We let ourselves be stampeded by alarms, herded to the polls by lying promises, swayed by propaganda, taxed of our produce for the welding of tighter collars about our liberties. To cite a few examples, those who remember World War I will recall the submarines seen off Boston and the other scare-heads which were later admitted to be wholly false, but necessary "to condition the people" for the war which Woodrow Wilson was re-elected because "he kept us out of." Then when the Great Humanitarian was using his public works program to build a machine that would re-elect him, there was the statement by Harry Hopkins that "the people are too damn dumb" to catch on. And now we have, among many other things, the mysterious submarines in the Pacific, the Army Day parades, the deluge of propaganda, the padded budgets, the illegal but tolerated mis-use of public funds to sell us the communistic regimentation of government medicine, and the numerous insidious encroachments upon our freedoms under the shibboleth of "social security." And we fall for these, and their like—again, and again. If "nincompoops" are preceded by symptoms, we have them.

Whatever you call it...



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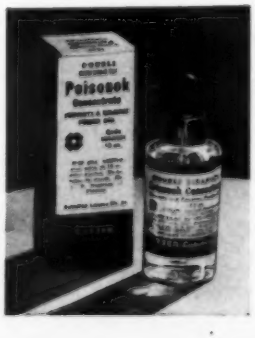

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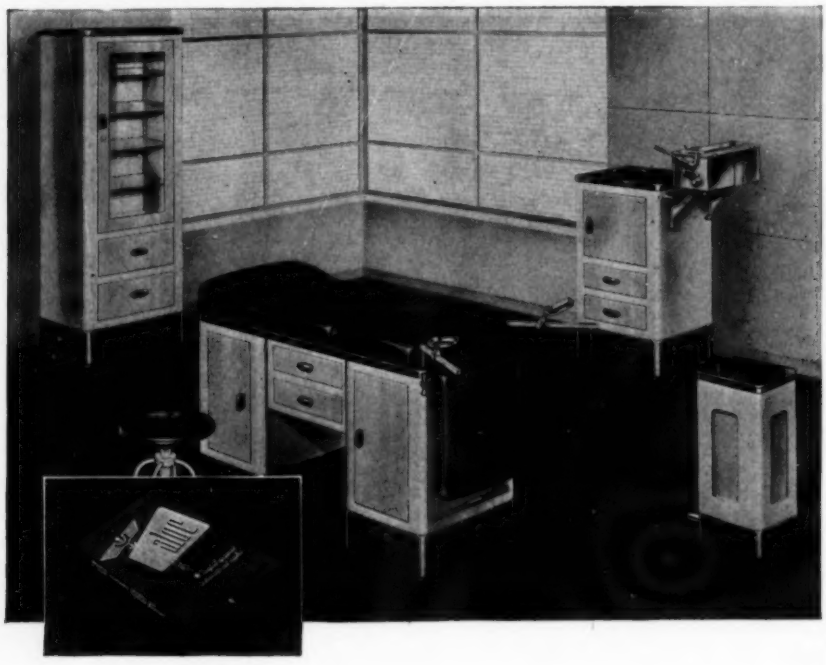

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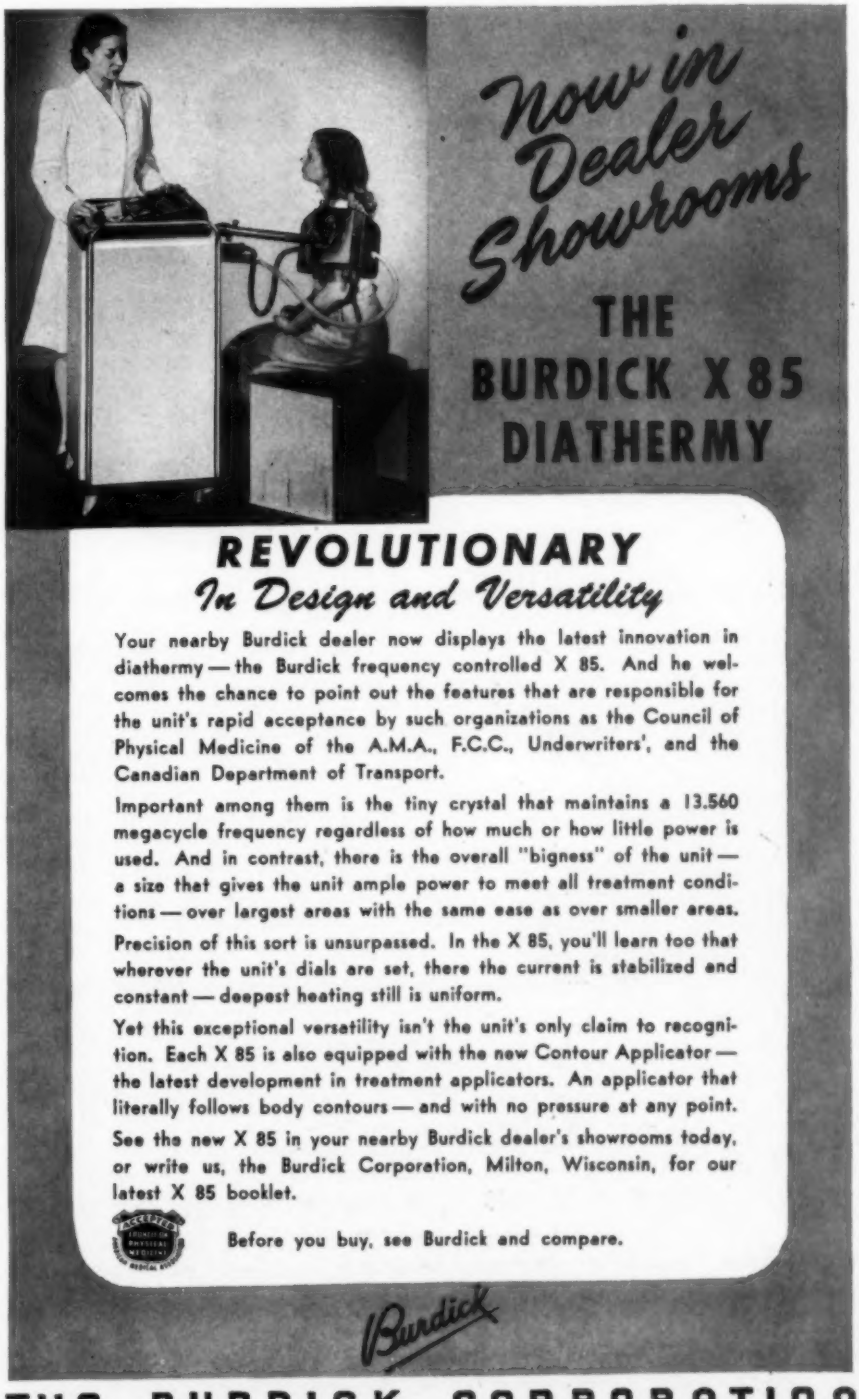
come a statistic by being absent. Particular targets of the N.Y.U. center are to be the diseases which its researchers say cause most lost time—respiratory, nervous and mental diseases, rheumatism, heart infirmities, and cancer. But it will also work on some specific occupational diseases. A number of the major unions — notably A.F.L.'s International Ladies Garment Workers Union and C.I.O.'s Amalgamated Clothing Workers Union—have their own industrial health programs and clinics. And one of the uses of John L. Lewis' welfare fund in the anthracite industry is to finance a university research program into silicosis and other mine occupational diseases.

—*Business Week*, Oct. 11, 1947.

Begin With Social Security

IT IS AROUND that, medical services being too expensive to be paid for by the persons receiving the services, the burden is to be dumped on the doctors who are ordered to assume a major portion of the expense. They are told they must give all patients all the care they need for a flat sum of $5 or $6 a year. They would be put completely at the mercy of neurotics and of chronic patients whose large demands would not, however, entitle a doctor to receive any extra pay. I do not know of any other case in which services are performed either by trades or by professions in which there is no relation between the amount of pay received and the service performed. Organized labor would not agree to any such arrangement of payment for its own services. Yet this is what would be done to the medical, dental, and related professions under a capitation system. This is what is meant by regimentation of patients and practitioners. The whole philosophy underlying compulsory sickness insurance is one of regulative control. There are rules for patients, for physicians, for nurses, pharmacists, hospitals, etc. Primary emphasis is placed on protection of the insurance funds, not of the patient. Everyone involved in the system—and under the proposals now before Congress, that would be everyone in the United States—would be compelled to be subservient to the Federal officials who would police the system or to the local representatives of governmental authority who in turn would be nothing more than remotely controlled proxies acting as "peripheral contacts" for the Federal government. In her testimony before the Health Subcommittee of the Senate Committee on Labor and Public Welfare DR. MARJORIE SHEARON recommended the creation of a Joint Congressional Committee on Social Security. The first duty of such a commit-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tee would be "to study the desirability of repealing the Social Security Act before the Nation is entirely engulfed by the legislative program which is being promoted." DR. SHEARON believes we are headed straight for State Socialism and dictatorship via a comprehensive scheme of National Compulsory Social Security for the entire population. It will be tax, and tax, and tax. It will be rule, regulate, and regiment.

—*Connecticut State Med. J.*, Mar., 1948

Remember OPA

RECENT testimony of Margaret Shearon, Ph. D., before the Health Subcommittee of the Senate Committee on Labor and Public Welfare at the hearings on the extremely controversial issues involved in Senate bills 545 and 1320 contained some of the following thoughts: Testimony before the Subcommittee, prior to her own, had contained no discussion of the rules and regulations of compulsory sickness insurance. These are, however, of infinitely more importance than the provisions of the basic statute. The members of Congress enact the original law; thereafter it is the Federal officials in the executive department who write and enforce the rules and regulations which have the force of law. The number of such rules and regulations is staggering. So is their complexity. By the time social insurance had been in operation 40 years in Germany the number of laws, ordinances and interpretations was so voluminous that a prominent expert in that country stated, "There is no longer a single specialist in Germany who knows even superficially the principal features of social insurance." They had less than 40 million people to consider — we would have 143 million in the United States. During the 1920's so many changes in the German laws on social insurance were made that the pertinent commentaries were no longer published in book form but in catalog form, so that any entry could be quickly replaced by another. In Great Britain, where only 40% of the population (approximately 20 million workers), was covered by national health insurance, the number of rules and regulations reached the staggering total of 2000 within three decades. It required a volume of nearly 1300 pages in length to cover the rules and regulations, the health insurance laws and amendments thereto, and the interpretations of these legislative, regulative and interpretative pronouncements. If such a volume of regulatory interference with the lives of the people was necessary in the small area of the British kingdom where the population is reasonably homogenous and the

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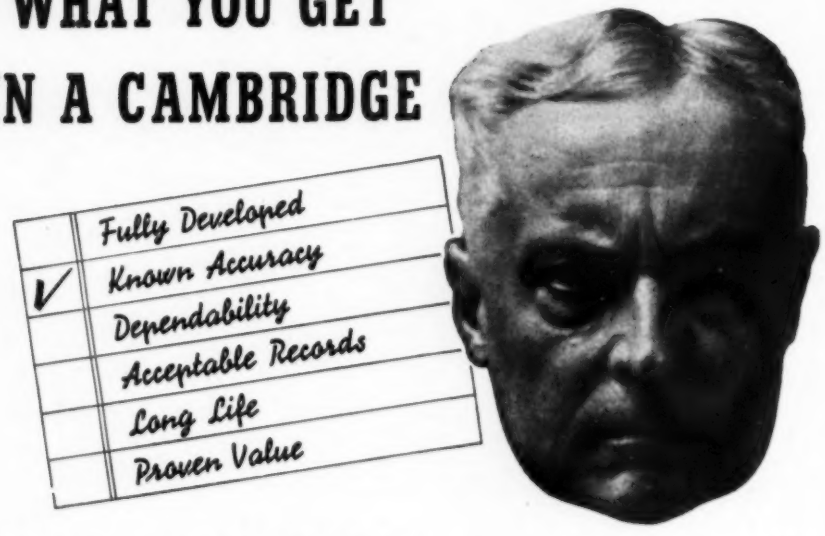

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geographic conditions do not show great extremes what could one expect other than the volume of regulations for a population of 143 millions in a country with the geographic variety and the social and economic differences found in the United States would be astonishing. Physicians, dentists, nurses, hospitals and patients would eventually be overwhelmed by these compulsive rules, regulations and laws. This is what is meant by *compulsion* and by *unwarranted regulative interference* with the daily lives of every person in the United States. There can be no force more effective against this proposed legislation than a fully, truthfully informed public.

—C.R.W., in *Weekly Bulletin of the St. Louis Med. Soc.*, March 2, 1948.

Corruption by Socialized Medicine

SOME 86% of Britain's doctors have voted against participating in the socialized medicine system proposed by the Labor government. At this writing, the English doctors' arguments against planned medicine have not yet arrived. What interests us in this country is the question whether socialized medicine is good or bad—how it works. As one who has seen and studied the world's first, most elaborate, and best organized governmental system of medical service in actual operation, this writer cannot help but express his sincere respect for the British doctors' intellectual courage. They do not only expose themselves to the wrath of the all-mighty Labor government of their country, but actually refuse to accept what amounts to an extraordinary bribe. That is what socialized medicine amounts to: a legalized system of corruption and bribe, as the German example of its operation over a long period of years has shown. Compulsory general health insurance may operate under one or two schemes. Either the patient is "allocated" to one or to a few specified doctors or he has the choice among all the doctors who have signed up with the system. In the latter case—with free choice among doctors by the patient—here is what developed in Germany and what is to be expected in England and everywhere else. All but a very few doctors must sign up with the insurance scheme; they must do so because everybody, being a member of the scheme and having to pay his or her contribution, prefers to get free medical service, rather than to pay for it. That gives the doctor a more or less secure existence at low fees but at a high rate of "turnover." Moreover, the doctors need not compete with one another in terms of quality and service. Actually, a new kind of competition arises, to the detriment of the patient, of justice, and of the health scheme's finances. To get more income—nay, to get a decent income out of the low fees on which the scheme naturally is being operated—the doctor is interested in getting as many patients as possible. As he gets the more patients the "nicer" he is, the more willingness he shows to declare the patient ill and to provide him thereby with

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a sick leave as well as with cheap (or free) medications. In Germany, quite a few doctors misused their position in the scheme of being liberal to the clients and having as many as 100 patients visit their offices each day. The quality of their professional service deteriorated accordingly. A working man who wanted to have a day off would go to his doctor's office saying he had a headache, get a prescription for an aspirin and a statement from the doctor that he was unable to work that day. If the doctor refused, the patient's freedom of choice permitted him to shop around until he found the cooperative kind of doctor. A fantastic corruption developed that wrecked the finances of the health insurance scheme and created deficits which had to be filled at the taxpayers' expense. A decent and conscientious doctor on the other hand, languished in lack of patients. Without the patient's freedom to choose his doctor, compulsory health insurance means medical slavery rather than free medical service. With free choice it means the invitation to wholesale corruption.

—MELCHIOR PALYI, in "Voice of the People," *Chicago Tribune*, Mar. 8, 1948.

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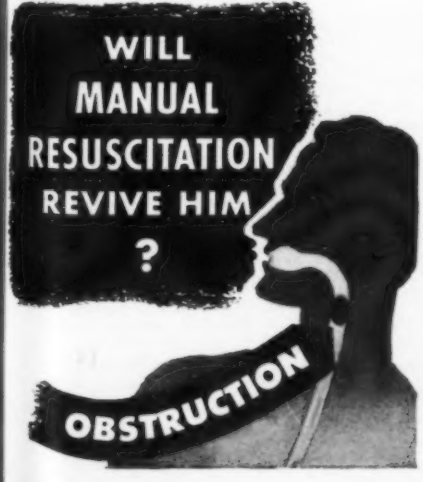
up a variety of tasks, which were of a nature easily disposable, with additional plans for activity; and again to the office and going over clinical and employment data with respect to a number of compensation claims from a southern state, appraising these with an attorney; and on the following day giving depositions on 10 such cases, using employment exposure and medical findings in the reviews; and, during the pauses in these proceedings, many an interesting story of southern legal experiences, among them one by ATTORNEY FIELDER, to wit: In a trial in a small country town where lawyers remove coats and even shoes in addressing a jury, one such was exhorting the jury in big words and technical terms, probably not well understood by his hearers, and later during a recess he was asked why he thus wasted his time and energy, to which he replied: "Wal, yuh got to mystify the commonality"... AND planning now sojourns to Louisville for advisory work on various phases of community health problems, and later to Boston for the combined meetings of the Industrial Health Conference—of which more later.



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Rx DESITIN OINTMENT

The External Cod-Liver Oil Therapy

USED EFFECTIVELY IN THE TREATMENT OF

Wounds, Burns, Ulcers, especially of the Leg, Intertrigo, Eczema, Tropical Ulcer, also in the Care of Infants

Desitin Ointment contains Cod-Liver Oil, Zinc Oxide, Petrolatum, Lanum and Talcum. The Cod-Liver Oil, subjected to a special treatment which produces *stabilization* of the Vitamins A and D and of the unsaturated fatty acids, forms the active constituent of the Desitin Preparations. The first among cod-liver oil products to possess unlimited keeping qualities, Desitin, in its various combinations, has rapidly gained prominence in all parts of the globe.

Desitin Ointment is absolutely non-irritant; it acts as an antiphlogistic, allays pain and itching; it stimulates granulation, favors epithelialisation and smooth cicatrisation. Under a Desitin dressing, necrotic tissue is quickly cast off; the dressing does not adhere to the wound and may therefore be changed without causing pain and without interfering with granulations already formed; it is not liquefied by the heat of the body nor in any way decomposed by wound secretions, urine, exudation or excrements.

DESITIN POWDER

Indications: Minor Burns, Exanthema, Dermatitis, Care of Infants, Care of the Feet, Massage and Sport purposes.

Desitin Powder is saturated with cod-liver oil and does not therefore deprive the skin of its natural fat as dusting powders commonly do. Desitin Powder contains Cod-Liver Oil, (with the maximum amounts of Vitamins and unsaturated fatty acids) Zinc Oxide and Talcum.

Professional literature and samples for Physicians' trial will be gladly sent upon request.

Sole Manufacturer and Distributor in U. S. A.

DESITIN CHEMICAL COMPANY

70 SHIP STREET PROVIDENCE, RHODE ISLAND

Consider

THE COLON

At least 80% of all arthritics (according to outstanding authorities) present ptosis, dilatation and/or atony of the colon, with functional impairment.

To combat such gastro-intestinal dysfunction through thorough systemic detergence Occy-Crystine is widely employed because of its effectiveness in promoting: *prompt relief* of colonic stasis . . . *marked improvement* of liver and gallbladder functions . . . *stimulation* of renal clearance of toxins . . . and *release of colloidal sulfur*, so frequently deficient in the arthritic economy. Include Occy-Crystine as an adjunct to treatment of your next few cases of arthritis.

FORMULA: Occy-Crystine is a hypertonic solution of pH 8.4, made up of the following active ingredients: Sodium thiosulfate, and magnesium sulfate, to which the sulfates of potassium and calcium are added in small amounts, contributing to the maintenance of solubility.

OCCY-CRYSTINE

— the sulfur-bearing saline detoxicant-eliminant

OCCY-CRYSTINE LABORATORY • SALISBURY, CONN.

Send FOR CLINICAL TRIAL SAMPLES

OCCY-CRYSTINE LABORATORY, Salisbury, Conn.
Please send clinical trial samples of Occy-Crystine. (c-a)

Dr._____

Address_____

City_____ State_____

SAVES HIM PAIN

saves you time . . .

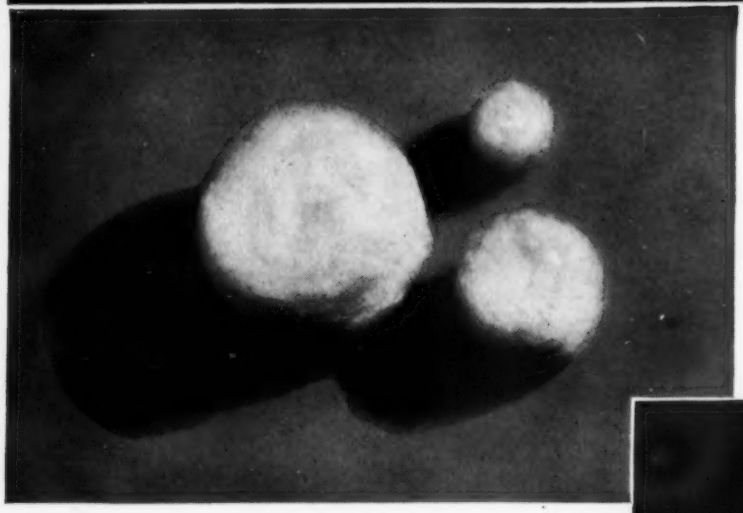
The rapid action of Butyn Sulfate 2% Solution saves you time in the induction of topical anesthesia, and in securing the prompt cooperation of your patient. Within *one minute* after instilling a few drops of Butyn Sulfate you may start a simple operation for the removal of impacted or superficially placed foreign particles in the eye. Compared to cocaine, the anesthesia produced by Butyn Sulfate is more rapid, more prolonged, more efficient and less toxic in the quantity required. It does not soften the corneal epithelium, seldom dilates the pupil, does not affect vessels, accommodation or ocular tension, and does not dry the conjunctiva. If you do not have Butyn Sulfate 2% Solution on hand for routine and possible emergency use, why not order a 1-fluidounce dropper bottle from your usual source of supply—*now?* No Federal Narcotic Blank is required. ABBOTT LABORATORIES, North Chicago, Ill.

BUTYN® SULFATE

2% SOLUTION

(p-aminobenzoyl-dibutylaminopropanol sulfate, Abbott)

DEPENDABLE dressings for



CURITY COTTON BALLS: Firm, soft, machine-made pledgets in three uniform sizes. Curity cotton balls *hold together when saturated* with alcohol and medications. For swabs, hypo wipes, eye and other treatment. Fill your needs from these three convenient sizes: Small, Medium, Large. (½ *actual size*)

CURITY STERILE LISCO* PADS: Cotton-and-gauze sponges, containing Densor compressed cotton for greater absorbency. Provide cleaner, safer wound care, yet cost less than Curity Sterile Gauze Pads.

CURITY STERILE GAUZE PADS: Highly absorbent, uniform pads—lintless, with all raw edges infolded. Six standard sizes eliminate the waste and time lost in making pads by hand.

*Reg. U. S. Pat. Off.

CURITY READY-CUT ADHESIVE: Each can contains 12" x 10 yds. cut into standard sizes, in Regular and Wet-Pruf, for quick, convenient taping. Firm adhesion, with minimum "creep," minimal irritation. Can be used with an adhesive rack. Saves you precious *time* in a multitude of routine bandaging jobs. Also available on individual spools.

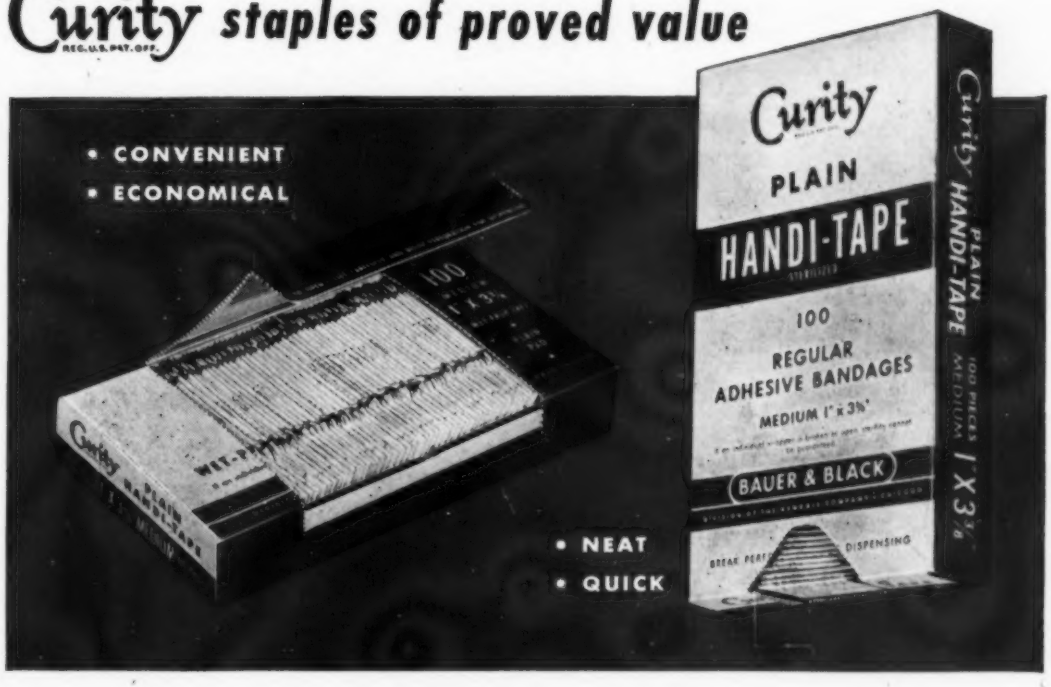
Products of

BAUER & BLACK

Division of The Kendall Company, Chicago 16

everyday industrial practice

Curity staples of proved value



HANDI-TAPE ADHESIVE BANDAGE

In a New Dispensing box

A new carton for Handi-Tape 100's, is tailored for the needs of the industrial physician. Handi-Tape adhesive bandages are quickly and easily dispensed two ways: the carton may be hung by a small hole in the box and the Handi-Tapes are reached through an opening in the end; or, if Handi-Tapes are stored in a drawer or cabinet, the side opening will keep them at your finger tips.

Curity Handi-Tapes satisfy the need in industrial practice for a small sterile dressing always ready for immediate use. Merely by pulling the red thread on the individually wrapped dressing, a completely sterile adhesive bandage is ready to apply over small cuts, scratches, bruises and other abrasions.

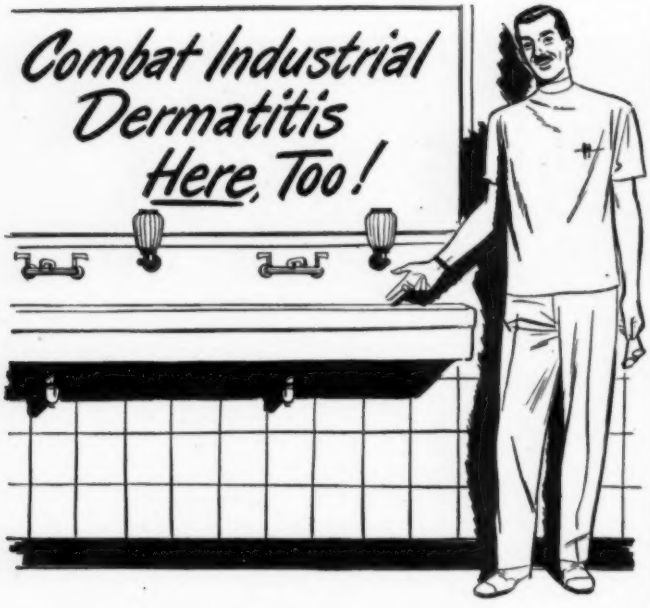
Curity Handi-Tapes are practical and inexpensive. They are available in 1" and ¾" widths. The 1" size is offered in either Regular or Wet-Pruf adhesive backing; the ¾" size is available in Regular backing only. 100 Handi-Tapes per carton.

Ask your Bauer & Black representative about Handi-Tapes or the other dressings featured here.

Curity
REG. U.S. PAT. OFF.

RESEARCH TO IMPROVE TECHNIC...TO REDUCE COST

Combat Industrial Dermatitis Here, Too!



Specify Formula No. 99 Antiseptic Liquid Soap

containing bis (3, 5, 6-trichloro-2-hydroxyphenyl) methane

Millions of workers come into daily contact with such sources of occupational dermatitis as cutting oils, solvents, abrasives, etc. Because the resulting irritations, abrasions and minor cuts frequently are not properly reported to the plant physician, they may lead to serious infections followed by considerable medical care, costly compensation, lessened productive efficiency or increased absenteeism.

To combat this problem, Armour has developed Formula No. 99, an antiseptic liquid hand soap for dispenser use which contains 2% bis (3, 5, 6-trichloro-2-hydroxyphenyl) methane, the Givaudan-Delawanna germicide more commonly known as "G-11". Formula No. 99 in all plant washroom dispensers offers an extremely simple, effective, and inexpensive method of protecting those workers who fail to report skin irritations or injuries for medical attention.

Formula No. 99, as shown by numerous plant studies . . .

- decreases effectively the bacterial population of the skin.
- reduces the probability of infection following abrasions and superficial skin wounds.
- promotes rapid healing.
- is also an excellent soap for surgical scrub-up, due to its antiseptic properties.

So put a "doctor" on duty in your washrooms, too—put Formula No. 99 in all your soap dispensers.

ARMOUR and Company

Industrial Soap Division

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Available to all industrial physicians and safety directors:

☐ The booklet, "Antiseptic Soap for Industrial Use", containing details of actual industrial studies.

☐ A sample of Formula No. 99 Antiseptic Liquid Soap.

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*Firm*_____

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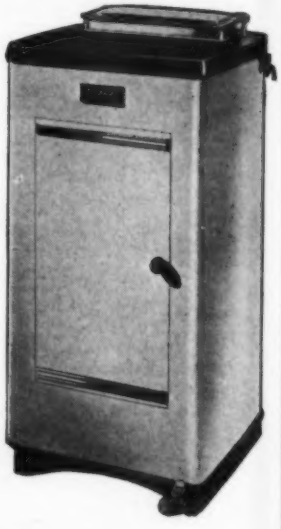
*City*_____ *Zone*____ *State*_____

SAFETY. . . . EFFICIENCY. . . . IN YOUR OFFICE OR CLINIC

CASTLE "95" STERILIZER

"Cast-In-Bronze" leakproof boiler. "Full - Automatic" control, law water cut-off. Instrument sterilizer 16" x 6" x 4", chrome finish. Cabinet 17½" wide, 15" deep, 35" high. Oil check foot lift.

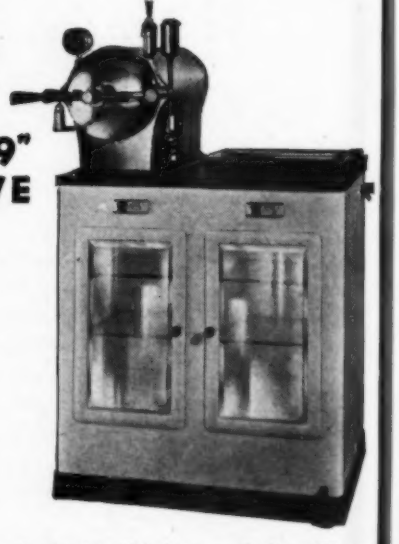


CASTLE NO. 46 LIGHT

Lamp head tilts or rotates to any position. Raises to 75", lower to 48". Long offset arm for positioning directly over table. Cool, color-corrected, shadow-free illumination. Telescopic adjustment requires no mechanical locks or clamps. Non-tipping base with casters for complete mobility.

CASTLE "669" AUTOCLAVE

Standard 16"x6"x 4" recessed chrome instrument sterilizer. 8''x16'' chrome autoclave. Both "Cast-In-Bronze" and "Full-Automatic" 9"x20" free table top. Double, illuminated cabinet. Oil check foot lift.



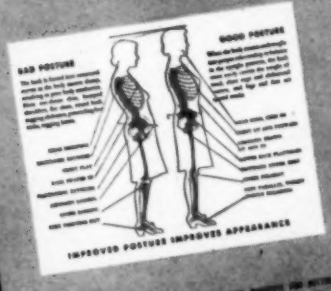
For full description of Castle Lights and Sterilizers for the modern office, write: Wilmot Castle Co., 1161 University Avenue, Rochester 7, N. Y.

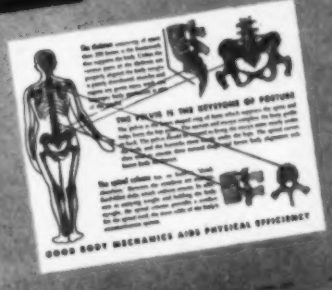
Castle **LIGHTS AND STERILIZERS**

10th annual

CAMP NATIONAL POSTURE WEEK MAY 3-8

GOOD POSTURE IS A GOOD HABIT





FREE: HUMAN INTEREST GOOD POSTURE CHART in full color 18" x 24" designed for physicians' offices, clinics and health centers. One in a standard series widely distributed in schools, colleges, industrial plants, "Y's" and similar outlets. Write for your office copy of this educational chart on your professional letterhead to SAMUEL HIGBY CAMP INSTITUTE FOR BETTER POSTURE, EMPIRE STATE BLDG., NEW YORK 1, N.Y.

AVAILABLE: Two interestingly illustrated 16 page booklets on posture prepared especially for distribution by physicians to their patients. Their titles: "The Human Back—its relationship to Posture and Health" and "Blue Prints for Body Balance." Ask for the quantity you need on your professional letterhead. THE SAMUEL HIGBY CAMP INSTITUTE FOR BETTER POSTURE, Empire State Bldg., New York 1, N. Y. Founded by S. H. Camp & Company, Jackson, Mich.

In its tenth year, Posture Week will again highlight our year-round program of focusing attention on the significance of good posture as an important element in good health and physical fitness.

Through practical cooperation and voluminous correspondence physicians, educators and lay groups in the field of public health have expressed their appreciation for this work.

Naturally, we hope to again merit the continued cooperation and approval of the medical profession.

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Pain, Swelling, Soreness

In the treatment of boils or other localized infections where "Moist Heat" is indicated, the "Moist Heat" of ANTIPHLOGISTINE helps relieve pain, swelling, and soreness.

Applied comfortably hot, ANTIPHLOGISTINE supplies "Moist Heat" for several hours. ANTIPHLOGISTINE may be used with chemotherapy.

The "Moist Heat" of ANTIPHLOGISTINE is also effective in relieving the pain and swelling of a sprain, bruise or similar injury or condition.

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FOILLE

EMULSION-OINTMENT

RELIEVES PAIN

caused by

BURNS and other NON-SYSTEMIC SURFACE INJURIES

Samples and Literature on request

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Reduce Absenteeism—

Combat Functional

DYSMENORRHEA

Two Ways

1. **Analgesia of the cramp-like pain.**
2. **Relaxation of Uterine Smooth Muscle Spasm—a frequent cause of such pain.**

For happier, more comfortable, *more productive* hours for your girls, suggest Hillman's D Compound. Used in industry since 1930. Send for generous Trial Supply for your First Aid Room.

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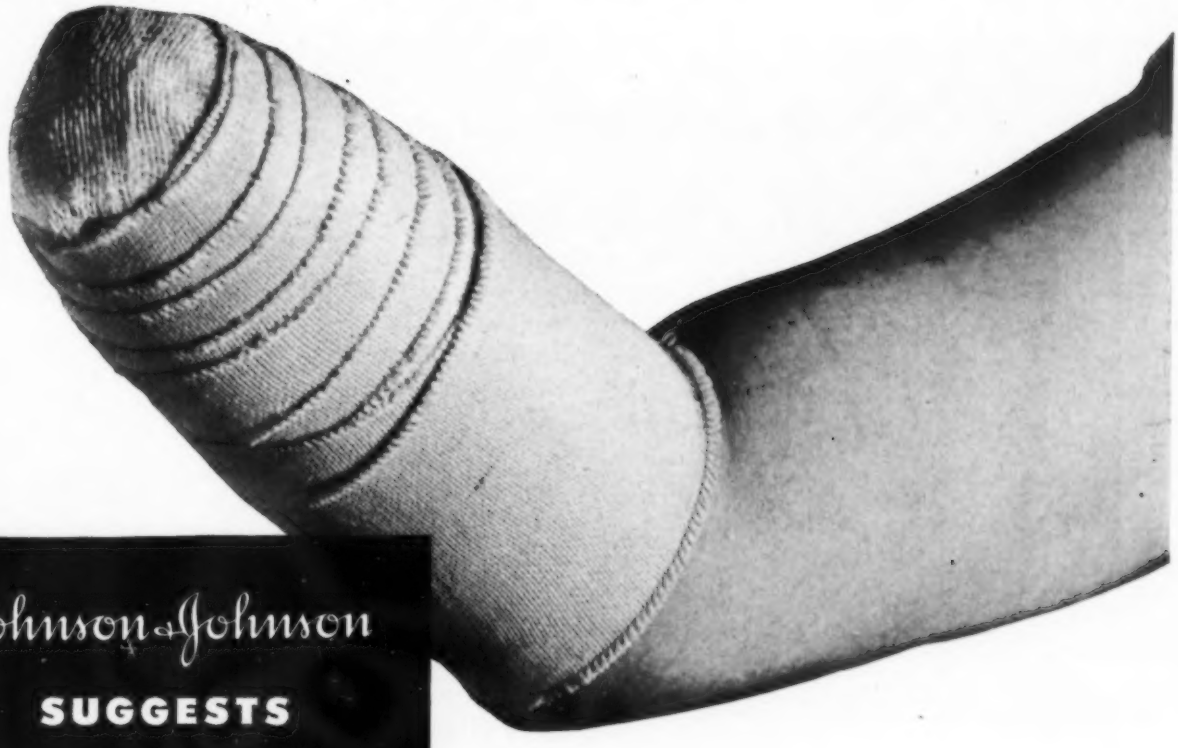
Please send FREE samples D Compound for our trial.

Name_____ M.D.

Name of Plant_____

Address_____

City and Zone_____ State_____



Johnson & Johnson

SUGGESTS

ADAPTIC

for pressure dressings

Among the medical contributions of the war was the use of pressure bandaging as part of the modern therapy for amputations and burns. One of the most important features of this type of treatment is sustained, evenly distributed physiologic pressure.

This pressure may readily be obtained through the use of ADAPTIC Elastic Bandages. These provide firm, even elastic compression without danger of circulatory embarrassment, since the gentle tension of the bandages makes them readily adaptable to changing physiologic needs.

Doctors have found many uses for ADAPTIC —the Johnson & Johnson Elastic Bandage . . . for strains, sprains, varicose veins, radical mastectomy and other applications.

ADAPTIC is made of fine, long-staple cotton which stretches without narrowing when wound. Provides a smooth, close-conforming supporting bandage. This makes it easy for patients to carry out the simpler home applications—saving you unnecessary calls. As the ADAPTIC can be laundered and reused many times, its over-all cost is comparatively low. Available in 2", 2½", 3" and 4" widths.

ADAPTIC—the Johnson & Johnson ELASTIC BANDAGE

When Should Good Nutrition Step In?

No one deliberately skips his evening meal, and few persons forego luncheon. But a significantly large number of adults and even children of school age fail to eat breakfast entirely or eat a totally inadequate breakfast. Yet this failure to eat a nutritionally sound breakfast makes it almost impossible for the other two meals of the day to supply the nutrients required daily by the organism. Hence good nutrition should start with breakfast.

To serve as a foundation for planning the morning meal, a basic breakfast pattern consisting of fruit, cereal, milk, bread and butter has been widely advocated. It provides a well-rounded assortment of essential nutrients, is universally available, is remarkably economical, and is readily acceptable to both children and adults.

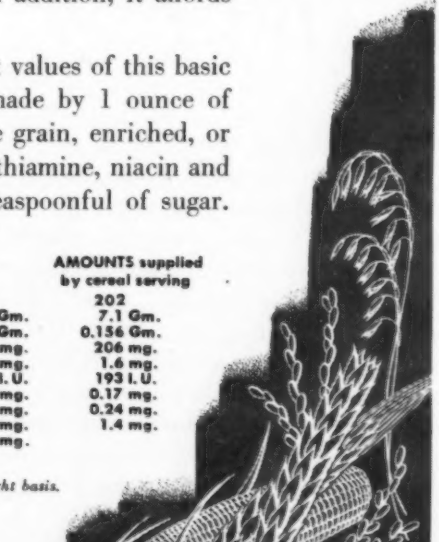
The cereal serving, consisting of hot or ready-to-eat breakfast cereal, milk, and sugar, is the centerpiece of this meal. It supplies high quality protein, readily utilized caloric food energy, B-complex and other vitamins, and important minerals. In addition, it affords almost endless variety.

The table indicates the nutrient values of this basic breakfast and the contribution made by 1 ounce of ready-to-eat or hot cereal* (whole grain, enriched, or restored to whole grain values of thiamine, niacin and iron), 4 ounces of milk and 1 teaspoonful of sugar.

The presence of this seal indicates that all nutritional statements in this advertisement have been found acceptable by the Council on Foods and Nutrition of the American Medical Association.

BASIC BREAKFAST	TOTALS supplied by Basic Breakfast		AMOUNTS supplied by cereal serving
Orange juice, 4 oz.;	CALORIES	611	202
Ready-to-eat or Hot Cereal, 1 oz.;	PROTEIN	20.7 Gm.	7.1 Gm.
Whole Milk, 4 oz.;	CALCIUM	0.465 Gm.	0.156 Gm.
Sugar, 1 teaspoon;	PHOSPHORUS	488 mg.	206 mg.
Toast (enriched, white), 2 slices;	IRON	3 mg.	1.6 mg.
Butter, 5 Gm. (about 1 teaspoon);	VITAMIN A	1074 I.U.	193 I.U.
Whole Milk, 8 oz.	THIAMINE	0.52 mg.	0.17 mg.
	RIBOFLAVIN	0.87 mg.	0.24 mg.
	NIACIN	2.3 mg.	1.4 mg.
	ASCORBIC ACID	64.8 mg.	

*Composite average of all breakfast cereals on dry weight basis.



CEREAL INSTITUTE, INC.

A research and educational endeavor devoted to the betterment of national nutrition.

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VITAL HELP IN EXAMINATION

MOVES FREELY INTO ANY POSITION AND STAYS PUT—*WITHOUT LOCKING*

CHOICE OF 2 BASES

UNIVERSAL

With this combination base the magnifier may be clamped or screwed to any surface—horizontal, sloping or vertical.

PEDESTAL

Also available in a portable floor-type unit for first aid rooms, hospitals, physicians, oculists, etc.

In certain types of examination, treatment and minor surgery a sight-booster is desirable.

For those occasions you will value the Dazor *Floating* Magnifier. It aids vision *two ways*: (1) with a sharp, clear enlargement of the area to be viewed, and (2) with properly directed, soft, fluorescent lighting.

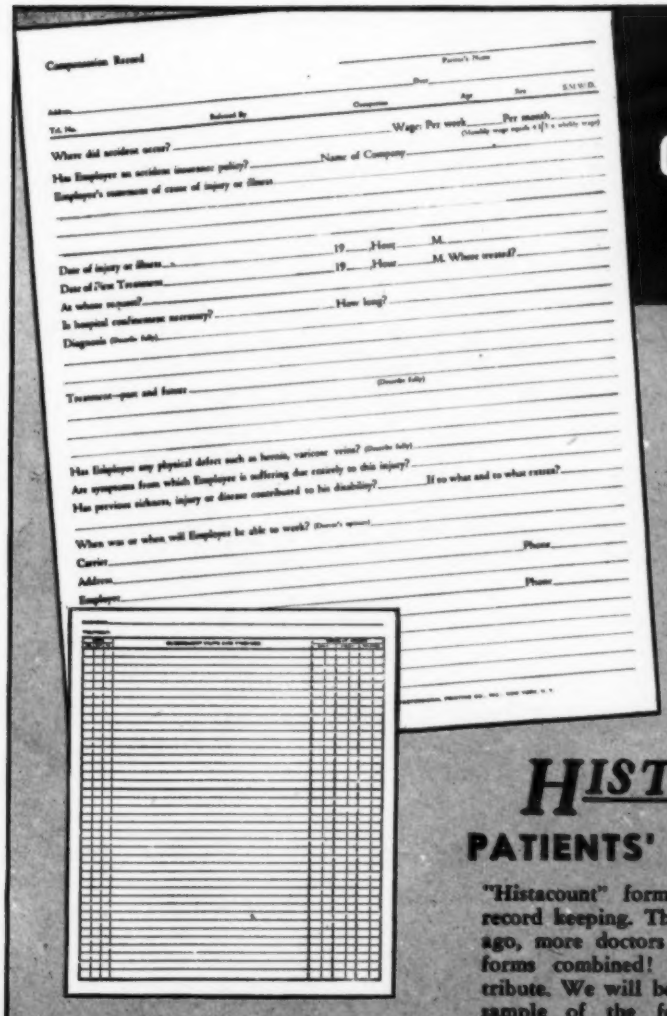
A touch of the hand raises, lowers, swings or tilts the Dazor Magnifier —quickly *floats* it to the proper position. There it stays without fastening, held firmly by the patented Dazor *Floating* Arm.

Nurses, plant doctors and general practitioners will find many uses for this seeing instrument. So will specialists—the gynecologists, proctologists, dermatologists, oculists and others. So will hospitals, clinics and medical laboratories.

For office "paper work" and other general seeing needs, use the lamp that gives you a *correct fit* in lighting —the Dazor *Floating* Lamp. It is available in both fluorescent and incandescent types.

If your supplier hasn't stocked Dazor *Floating* Magnifiers and Dazor *Floating* Lamps, ask him to order them for you. Should he wish the distributor's name, have him write Dazor Manufacturing Corp., 4481-87 Duncan Ave., St. Louis 10, Mo. *In Canada* address inquiries to Amalgamated Electric Corporation Limited, Toronto 6, Ontario.

DAZOR FLOATING MAGNIFIER WITH FLUORESCENT LIGHTING


Compensation Record

Where did accident occur?

Has Employer an accident insurance policy? Name of Company

Employee's statement of cause of injury or illness

Date of injury or illness 19 Hour M.

Date of First Treatment 19 Hour M. Where treated?

At whose request?

Is hospital confinement necessary? How long?

Diagnosis

Treatment—past and future

Has Employee any physical defect such as hernia, varicose veins?

Are symptoms from which Employee is suffering due entirely to this injury?

Has previous sickness, injury or disease contributed to his disability? If so what and to what extent?

When was or when will Employee be able to work?

Carrier Phone

Address

Employer Phone

At the top is illustrated the front and below it, in a further reduced size, the back of the form. The back is also made without the account record section.

THE COMPENSATION FORM

MODERN, EFFICIENT SCIENTIFICALLY CORRECT

This "Histacount" form meets the needs of one branch of the Medical Profession. There is a "Histacount" form for every branch. All are basically identical and can be used together where one doctor covers two or more specialties. All are scientifically correct, up-to-the-minute and amazingly efficient. All are made for standard cards files 5" x 8" and 4" x 6".

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"Histacount" forms have revolutionized doctors record keeping. Though introduced only 15 years ago, more doctors use them now than all other forms combined! They can receive no greater tribute. We will be pleased to send you an actual sample of the form illustrated and our big catalogue illustrating and describing all forms for general practitioners and specialists. No obligation of course.

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SAMPLES AND CATALOGUES

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A mild hand cleanser will help prevent the reappearance of many skin problems. Breck Hand Cleaner was designed as a gentle and thorough cleanser to remove oil, grease, paint, and other skin irritants from the hands. It is a bland non-irritating cleaner without soap or abrasive materials. Breck Hand Cleaner may also be used on the face and arms.

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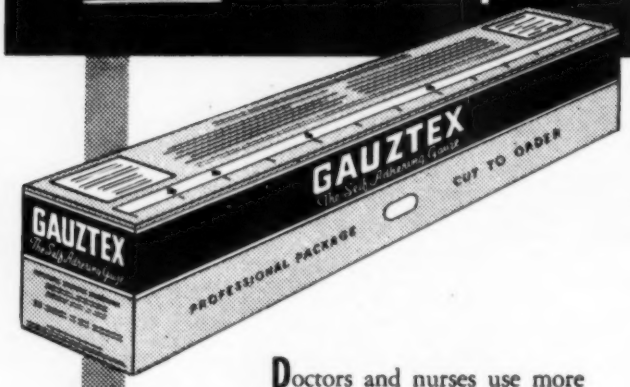
CANADIAN ADDRESS . 110 SLATER STREET . OTTAWA

Doctors and Nurses Stick to GAUZTEX

. . . the bandage that doesn't stick to the patient



Doctors and nurses use more Gauztex than any other brand of cohesive gauze. They know that Gauztex means highest standards of manufacture, unsurpassed quality of product.

Gauztex is ideal for all wrap-around bandaging of hands, arms, legs, fingers, and feet. Applies more easily than tape . . . holds fast . . . yet comes off without painful pulling, leaves no sticky adhesive on sensitive skin or hair.

And the Gauztex 12 in. x 10 yd. Professional Package is cut to your individual order . . . in the exact widths you need for your particular problems. Made in two styles—Gauztex Regular and Gauztex Oil Resistant. Professional samples available upon request.

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A Biographical Dictionary of the Notable Physicians and Surgeons, Hygienists and Dentists in Industrial Medical Practice and Related Activities

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Vignettes of the Maladies of Workers

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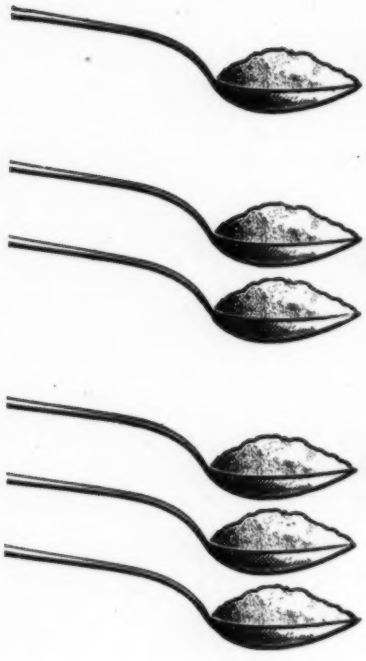

*Aperient

*Laxative

*Cathartic

*Average dose

a balanced saline combination which acts by simple osmosis to dilute fecal residue and produce soft fluid bulk....

evokes peristalsis and evacuation by nature's own methods.

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New York 20, N. Y.

RIASOL

for a Smoother Course in Psoriasis

Clearer sailing and a smoother course are ahead for psoriasis sufferers following applications of RIASOL, the well-known antipsoriatic agent for combatting this tormenting condition.

Because of its outstanding accomplishment in clearing unsightly lesions in most cases, and also because recurrences are often minimized, physicians over the entire nation are prescribing RIASOL with confidence and enthusiasm.

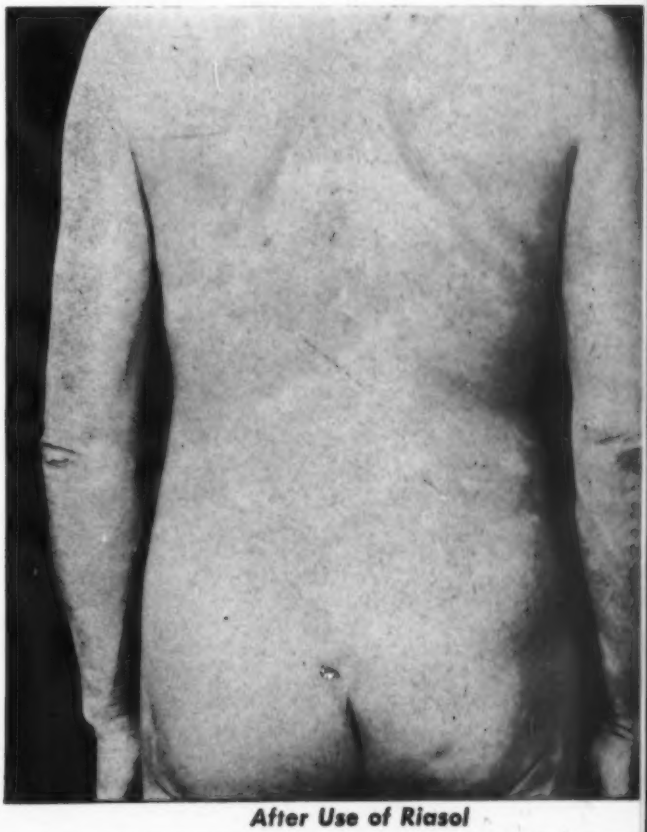
Patients prefer RIASOL because visible cosmetic improvement is usually noted in a relatively short time. Also, they find it simple, pleasant and convenient to use.

RIASOL contains 0.45% mercury chemically combined with soaps, 0.5% phenol and 0.75% cresol in a washable, non-staining, odorless vehicle.

Apply daily after a mild soap bath and thorough drying. A thin, invisible, economical film suffices. No bandages are necessary. After a week, adjust to patient's progress.

RIASOL is never advertised to the laity. Supplied in 4 and 8 fld. oz. bottles, at pharmacies or direct.

Before Use of Riasol



After Use of Riasol

MAIL COUPON TODAY —
PROVE RIASOL YOURSELF

SHIELD LABORATORIES IM-4-48
8751 Grand River Ave., Detroit 4, Mich.

Please send me professional literature and generous clinical package of RIASOL.

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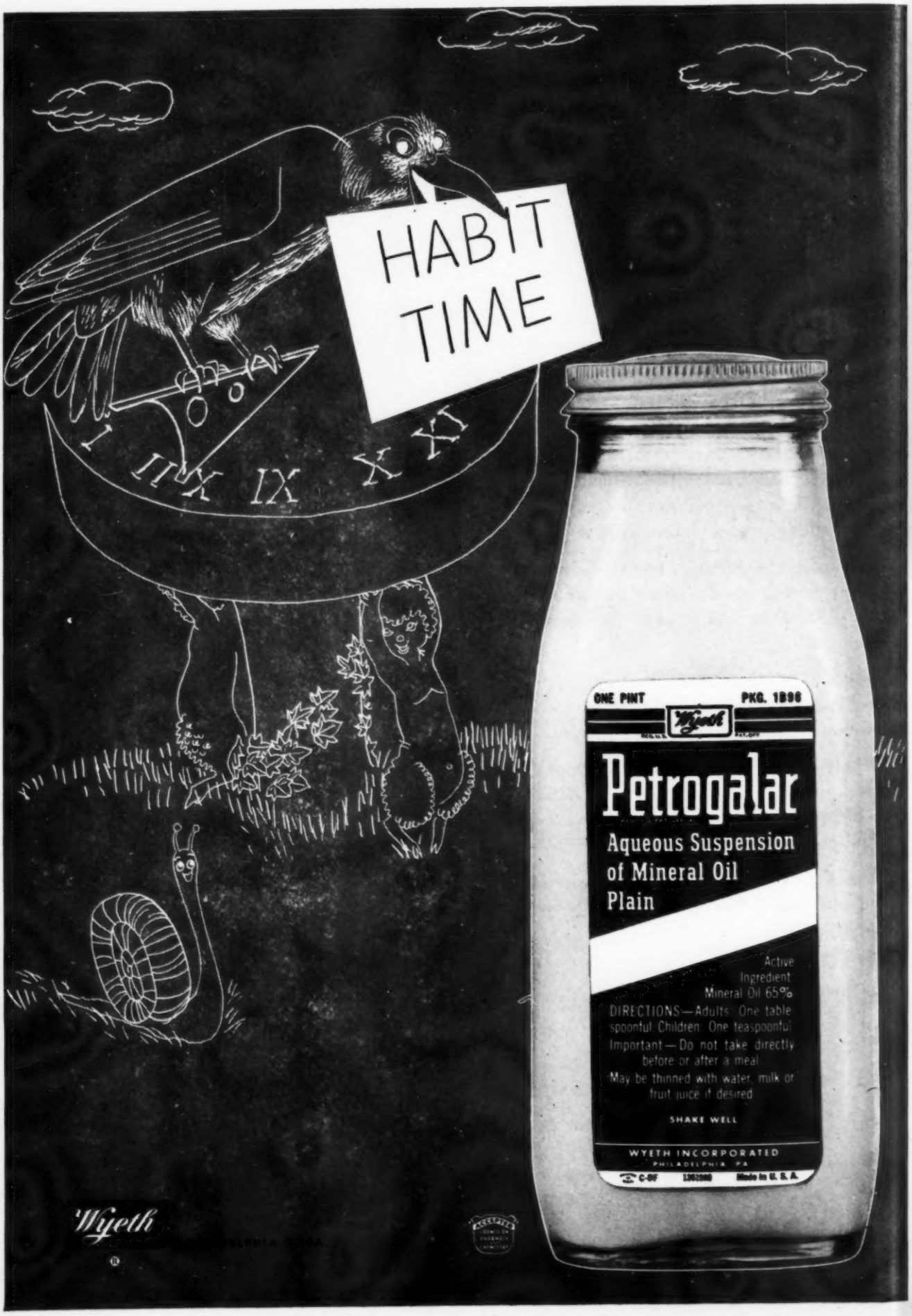
RIASOL for PSORIASIS


HABIT
TIME
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ONE PINT
PKG. 1898
Wyeth
Petrogalar
Aqueous Suspension
of Mineral Oil
Plain
Active
Ingredient
Mineral Oil 65%
DIRECTIONS—Adults: One tablespoonful. Children: One teaspoonful.
Important—Do not take directly before or after a meal.
May be thinned with water, milk or fruit juice if desired.
SHAKE WELL
WYETH INCORPORATED
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Made in U. S. A.
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IDLE WORK-HANDS *play costly tunes . . .*

Skilled hands, temporarily incapacitated, are responsible for millions of dollars in industrial losses every year. Skin ailments, resulting from frequent exposure to industrial irritants **plus** the use of caustic washing soaps, are sour notes which throw production schedules off-key through excess absenteeism. Your plant is no exception in requiring safeguards against these dangers.

West's Lan-O-Kleen hand cleanser, superfatted with a high content of lanolin, plays an important part in a dermatitis prevention program. Made of fine corn meal, containing no harsh, gritty substances or excess alkali, Lan-O-Kleen thoroughly yet gently removes stubborn dirt, grime and grease from sensitive skins. In addition, it has beneficial emollient properties resulting from superfatting with lanolin.

Decide now to adopt the Lan-O-Kleen wash-up habit in your plant. Consult one of West's country-wide staff of sanitation specialists. He'll be glad to give you further details.

WEST LAN-O-KLEEN HAND CLEANSER

SAVE SOAP AND YOU SAVE EXTRA MONEY!

A modern, economical Lan-O-Kleen Dispenser regulates the amount of soap used—*prevents costly waste.* Readily adaptable for Bradley Fountains.

Send for this handsomely illustrated folder. It contains details of the dispenser, the healthful cleansing action of Lan-O-Kleen and complete washing instructions.

PRODUCTS THAT PROMOTE SANITATION

WEST DISINFECTING Company

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For More Rapid Desensitization of the Hay-Fever Patient

PYRIBENZAMINE

The prophylactic administration of Pyribenzamine hydrochloride prior to a desensitizing dose of allergen has proved successful in the prevention of constitutional reactions.[1] By using Pyribenzamine routinely during desensitization therapy, it is possible to make greater increments of dosage, thereby reducing the total number of injections required.[2]

Likewise, in the prophylaxis and treatment of allergic reaction to liver extract, penicillin, the sulfonamides and certain other drugs, Pyribenzamine has proved efficacious.[1, 3]

1. Arbesman, C. E. et al. Jl. of Allergy 17:275, Sept. 1946.
2. Fuchs, A. M. et al. Jl. of Allergy 18:385, Nov. 1947.
3. Feinberg, S. M. and Friedlaender, S. Am. J. Med. Sci. 213:58, Jan. 1947.

ISSUED: Scored tablets 50 mg. • Elixir, 5 mg. per cc.

Ciba PHARMACEUTICAL PRODUCTS, INC., SUMMIT, NEW JERSEY

2/1264M PYRIBENZAMINE (brand of tripelennamine) • T. M. Reg. U. S. Pat. Off.